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ABSTRACT

Twenty-five appendixes from a study attempting to match capabilities of the handicapped to the human attribute requirements of three jobs (general secretary, automotive mechanic, and business data programmer) are presented. Appendixes include information on such topics as data analysis for identification of key tasks: job descriptions for the three tasks: definitions of human attribute requirements of jobs (including general vocational capabilities, cognitive abilities, psychomotor abilities, sensory capacities, and interests): statistical scores from data analysis: and sample evaluation instruments. (CL)

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- Operating information systems and services
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APPENDIX A

DATA ANALYSIS FOR IDENTIFICATION OF KEY TASKS

STEPS I, II, III

STEP I

AMMERMAN AND PRATZNER DATA ANALYSIS FOR IDENTIFICATION OF KEY TASKS

GENERAL SECRETARY

	Tasks are Part of Job 3.5 or higher av. ratings by workers		Relative importance of Tasks to Jobs 1.5+ av. ratings by both workers and supervisors	
Task #	1a Worker Rating	1b %	1c W*	S*
38	5.0	78	2.7	2.9
86	3.6	62	2.1	2.1
92	3.5	68	2.5	2.7
96	3.5	48	2.2	2.3
121	3.8	57	2.3	2.7
128	4.8	72	2.8	2.6
138	3.8	51	2.4	2.4
179	4.1	62	2.5	2.7
180	4.7	78	2.6	2.8
189	4.3	66	2.6	2.4
192	4.9	75	2.6	2.4
193	3.8	51	2.4	2.3
338	5.2	83	2.6	2.6
339	5.7	90	2.6	2.9
340	4.7	72	2.3	2.4
342	3.8	55	2.5	2.6
343	4.3	68	2.2	2.3
344	5.2	86	2.3	2.4
345	5.0	81	2.1	2.2
346	4.7	73	1.9	1.9
347	4.4	72	2.5	2.6
348	5.9	92	2.9	2.9
349	3.9	58	2.0	1.9
352	3.9	57	1.9	2.0
353	4.8	72	2.7	2.6
356	4.6	73	2.0	2.0
359	4.1	63	2.9	2.6
360	4.1	58	2.1	2.1
361	4.8	70	2.0	2.0
362	4.7	73	2.5	2.5
363	3.8	55	2.7	2.6
367	4.8	80	2.1	2.3
389	4.8	78	2.7	2.7
390	3.6	49	1.7	1.6
392	5.1	82	2.7	2.6
395	4.1	60	2.1	2.3
401	5.6	92	2.9	2.9
402	5.3	85	2.7	2.6

*W - Worker
S - Supervisor

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GENERAL SECRETARY

(Continued)

	Tasks are Part of Job 3.5 or higher av. ratings by workers		Relative importance of Tasks to Jobs 1.5+ av. ratings by both workers and supervisors	
	1a	1b	1c	
Task #	Worker Rating	%	W	S
407	5.1	80	2.7	3.0
417	3.7	66	2.8	2.8
418	4.9	81	2.8	2.7
430	3.9	56	2.8	2.6
433	4.4	68	2.8	2.8
437	4.2	63	2.4	2.7
438	5.0	80	2.6	2.8
439	3.7	59	2.8	2.9
445	4.7	76	2.6	2.9
449	3.7	63	2.2	2.3
470	4.2	60	2.7	2.7

STEP I

AMMERMAN AND PRATZNER DATA ANALYSIS FOR IDENTIFICATION OF KEY TASKS

AUTO MECHANIC

	Tasks are Part of Job 3.5 or higher av. ratings by workers		Relative importance of Tasks to Jobs 1.5+ av. ratings by both workers and supervisors	
	1a	1b	1c	
Task #	Worker Rating	%	W*	S*
14	3.5	58	2.6	2.9
67	4.4	73	2.3	2.5
68	4.3	73	2.4	2.5
72	4.3	77	2.6	2.7
117	4.3	66	2.6	2.9
119	4.7	80	2.5	2.9
121	4.2	67	2.4	2.6
125	5.0	86	2.3	2.7
127	4.4	71	2.2	2.7
130	3.5	53	2.5	2.8
131	4.1	66	2.5	2.8
132	4.4	70	2.3	2.7
133	3.8	58	2.4	2.8
136	4.3	73	2.1	2.3
140	4.5	75	2.2	2.3
141	4.0	62	2.3	2.5
143	5.0	85	2.6	2.8
144	4.2	68	2.6	2.8
145	4.7	80	2.2	2.5
146	4.2	65	2.5	2.8
147	4.4	68	2.2	2.4
150	4.6	78	2.1	2.3
155	4.4	65	2.3	2.6
156	3.6	57	2.4	2.8
160	5.3	85	2.5	2.8
162	4.0	62	2.3	2.5
163	4.3	68	2.4	2.7
166	4.2	70	2.3	2.4
169	4.0	65	2.1	2.2
179	3.5	57	2.5	2.5
181	4.3	66	2.4	2.7
182	4.0	63	2.5	2.6
183	3.5	57	2.4	2.6
188	4.1	65	2.1	2.2
189	3.9	58	2.4	2.6
190	3.7	62	2.1	2.3
211	4.0	65	2.3	2.6
212	4.3	71	2.2	2.7
213	4.2	72	2.2	2.4
216	4.8	82	2.6	2.9
217	4.8	78	2.3	2.6

*W - Worker
S - Supervisor

AUTOMOTIVE MECHANIC
(Continued)

	Tasks are Part of Job 3.5 or higher av. ratings by workers		Relative importance of Tasks to Jobs 1.5+ av. ratings by both workers and supervisors	
	1a	1b	1c	
Task #	Worker Rating	%	W	S
218	5.0	83	2.7	3.0
219	5.2	85	2.6	2.9
220	5.1	85	2.7	3.0
222	4.4	70	2.3	2.8
224	4.8	77	2.6	2.8
225	4.7	82	2.6	2.8
228	3.6	57	2.3	2.3
229	4.6	73	2.4	2.6
230	4.8	78	2.4	2.6
236	4.6	78	2.1	2.3
237	4.3	73	2.3	2.6
238	4.8	80	2.1	2.3
239	4.4	77	2.3	2.6
240	4.5	72	2.2	2.5
241	4.7	75	2.5	2.8
242	4.9	80	2.3	2.5
244	5.3	87	2.6	2.8
249	5.1	85	2.7	2.8
254	4.8	82	2.3	2.4
255	4.7	80	2.6	2.9
256	5.0	83	2.2	2.4
257	4.6	73	2.1	2.3
258	4.1	72	2.3	2.7
259	3.9	65	2.3	2.5
263	4.5	75	2.3	2.5
268	4.5	78	2.3	2.3
275	4.2	67	2.4	2.5
276	4.0	62	2.2	2.3
277	4.0	65	2.2	2.3
279	3.8	65	2.2	2.5
281	4.4	75	2.3	2.5
282	3.8	65	2.1	2.5
284	4.2	67	2.3	2.5
285	4.2	67	2.3	2.5
286	3.5	53	2.2	2.4
287	4.2	70	2.4	2.7
289	4.0	67	2.1	2.3
290	4.3	68	2.3	2.5
301	4.7	75	2.3	2.7
305	4.8	73	2.5	2.7
306	4.6	75	2.3	2.5
308	4.8	82	2.5	2.8
316	4.8	82	2.5	2.8
324	4.1	65	2.5	2.7
327	4.4	70	2.5	2.7
328	4.8	82	2.5	2.8

AUTOMOTIVE MECHANIC
(Continued)

	Tasks are Part of Job 3.5 or higher av. ratings by workers		Relative importance of Tasks to Jobs 1.5+ av. ratings by both workers and supervisors	
	1a	1b	1c	
Task #	Worker Rating	%	W	S
329	3.9	57	2.3	2.4
332	4.6	80	2.4	2.7
333	4.2	67	2.4	2.6
337	4.5	73	2.4	2.8
339	3.7	55	2.1	2.3
340	3.8	55	2.0	2.3
341	4.8	80	2.5	2.7
345	4.3	70	2.2	2.5
347	4.6	75	2.1	2.4
364	4.2	63	2.3	2.6
365	3.6	55	2.0	2.3
366	4.0	60	2.2	2.5
367	3.6	52	2.3	2.5
368	3.9	62	2.3	2.5
371	3.7	55	2.1	2.3

STEP I

AMMERMAN AND PRATZNER DATA ANALYSIS FOR IDENTIFICATION OF KEY TASKS

BUSINESS DATA PROGRAMMER

	Tasks are Part of Job 3.5 or higher av. ratings by workers		Relative importance of Tasks to Jobs 1.5+ av. ratings by both workers and supervisors	
Task #	Worker Rating	%	W*	S*
3	3.6	68	2.8	2.7
65	3.7	52	2.8	2.9
236	4.0	73	2.7	2.8
297	4.2	80	2.6	2.7
298	4.3	92	2.5	2.5
299	4.1	85	2.2	2.6
300	4.2	82	2.4	2.6
302	3.5	67	2.5	2.5
309	4.9	87	2.4	2.8
318	5.5	95	2.8	2.9
326	4.1	90	2.2	2.5
330	5.4	92	2.6	2.8
331	4.2	87	2.1	2.5
350	3.6	68	1.9	2.3
351	3.5	62	2.0	2.3
352	3.9	80	2.2	2.5
354	5.4	98	2.8	3.0
366	3.7	65	2.5	2.3
375	4.4	90	2.4	2.6
376	3.8	82	2.1	2.5
394	4.8	98	2.5	2.8
395	4.4	80	2.1	2.4
396	5.3	93	2.7	3.0
397	5.2	93	2.7	3.0
401	3.7	88	2.0	2.5

STEP II

JOB TASKS RATED BY SUPERVISORS AS NEEDED WITHIN THREE MONTHS OF EMPLOYMENT

GENERAL SECRETARY

Task #	% Rating Experience 3 months or less - Supervisors
38	65.5
86	77.8
92	50.0
96	81.8
128	85.8
138	9.5.
179	56.5
180	81.0
189	85.4
192	96.4
193	88.9
338	100
339	100
340	93.8
342	100
343	100
344	100
345	96.6
346	96.6
347	86.7
348	94.4
349	95.7
352	100
353	100
356	96.8
359	95.0
360	100
361	100
362	100
363	90.0
367	100
389	88.9
390	100
392	100
395	100
401	100
402	100
407	100
417	86.4
418	96.9
430	56.0
433	62.1
437	100
438	55.0
439	87.5
445	87.5
121	43.8

STEP II

JOB TASKS RATED BY SUPERVISORS AS NEEDED WITHIN THREE MONTHS OF EMPLOYMENT

AUTOMOTIVE MECHANIC

Task #	% Rating Experience 3 months or less
14	64.0
67	74.1
68	75.0
72	54.2
117	61.8
119	58.8
121	53.1
125	85.3
127	63.6
130	53.3
131	56.3
132	73.5
133	53.1
136	60.0
140	64.7
141	52.9
143	57.1
144	52.9
145	82.9
146	57.6
147	67.6
150	88.6
155	71.4
156	50.0
160	74.3
162	57.1
163	65.7
166	51.5
169	82.9
179	51.4
181	50.0
182	55.9
183	52.9
188	62.9
189	55.9
190	64.7
211	50.0
212	73.5
213	73.5
216	50.0
217	81.8
218	50.0
219	60.6
220	54.5
222	59.4
224	61.8
225	58.8
228	59.4
229	60.6

AUTOMOTIVE MECHANIC
(Continued)

Task #	% Rating Experience 3 months or less
230	61.8
236	85.3
237	76.5
238	85.3
239	73.5
240	76.5
241	55.9
242	73.5
244	61.8
249	67.6
254	65.6
255	51.5
256	100
257	66.7
258	63.6
259	56.7
263	69.7
268	74.2
275	96.9
276	96.8
277	96.8
279	87.1
281	87.5
282	83.9
284	81.3
285	84.4
286	66.7
287	59.4
289	81.3
290	84.4
301	78.8
305	81.3
306	78.8
308	78.8
316	60.6
324	54.5
327	60.6
328	51.5
329	60.6
332	78.1
333	60.7
337	68.8
339	96.9
340	93.5
341	71.9
345	75.0
347	81.3
364	77.4
365	87.1
366	70.6
367	57.7
368	50.0
371	96.7
221	42.4

STEP II

JOB TASKS RATED BY SUPERVISORS AS NEEDED WITHIN THREE MONTHS OF EMPLOYMENT

BUSINESS DATA PROGRAMMER

Task	% Rating Experience 3 months or less
3	69.0
236	76.0
309	82.4
318	76.3
326	53.3
330	77.4
331	92.9
350	51.6
351	63.3
352	56.3
354	59.4
375	57.1
376	64.3
394	53.1
395	67.9
396	78.8
397	66.7
401 65.7	

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Task	% Rating Experience 3 months or less
65	46.2
297	37.5
298	35.1
299	35.5
300	35.5
302	34.5
366	14.3

STEP III

HIGH TO LOW RANKINGS USING WORKER SIGNIFICANT RATINGS

GENERAL SECRETARY

*indicates cut off point

Task #	Worker Rating: Tasks are part of the job (3.5 or higher average rating by workers)
348	5.9
339	5.7
401	5.6
402	5.3
338	5.2
344	5.2
392	5.1
407	5.1
38	5.0
345	5.0
438	5.0
192	4.9
418	4.9
128	4.8
353	4.8
361	4.8
367	4.8
389	4.8
180	4.7
340	4.7
346	4.7
362	4.7
445	4.7
356	4.6
347	4.4
433	4.4
189	4.3
343	4.3
437	4.2
*470	4.2
179	4.1
359	4.1
360	4.1
395	4.1
349	3.9
430	3.9
193	3.8
138	3.8
342	3.8
363	3.8
417	3.7
439	3.7
449	3.7
86	3.6
390	3.6
92	3.5
96	3.5

STEP III

HIGH TO LOW RANKINGS USING WORKER SIGNIFICANT RATINGS

AUTOMOTIVE MECHANIC

*indicates cut off point

Task #	Worker Rating: Tasks are part of the job (3.5 or higher average rating by worker)
160	5.3
244	5.3
219	5.2
220	5.1
249	5.1
125	5.0
143	5.0
218	5.0
256	5.0
242	4.9
216	4.8
217	4.8
224	4.8
230	4.8
238	4.8
254	4.8
305	4.8
308	4.8
316	4.8
328	4.8
341	4.8
119	4.7
145	4.7
225	4.7
241	4.7
255	4.7
*301	4.7
150	4.6
229	4.6
236	4.6
257	4.6
306	4.6
332	4.6
347	4.6
140	4.5
263	4.5
268	4.5
337	4.5
67	4.4
127	4.4
132	4.4
147	4.4
155	4.4
222	4.4
239	4.4
281	4.4
327	4.4
68	4.3
72	4.3

AUTOMOTIVE MECHANIC
(Continued)

*indicates cut off point

Task #	Worker Rating: Tasks are part of the job (3.5 or higher average rating by worker)
117	4.3
136	4.3
163	4.3
181	4.3
212	4.3
237	4.3
290	4.3
345	4.3
121	4.2
144	4.2
146	4.2
166	4.2
213	4.2
275	4.2
284	4.2
285	4.2
287	4.2
333	4.2
364	4.2
131	4.1
188	4.1
258	4.1
324	4.1
141	4.0
162	4.0
169	4.0
182	4.0
211	4.0
276	4.0
277	4.0
289	4.0
189	3.9
259	3.9
368	3.9
133	3.8
279	3.8
282	3.8
340	3.8
190	3.7
339	3.7
371	3.7
156	3.6
228	3.6
365	3.6
367	3.6
14	3.5
130	3.5
179	3.5
183	3.5
286	3.5

STEP III

HIGH TO LOW RANKINGS USING WORKER SIGNIFICANT RATINGS

BUSINESS DATA PROGRAMMER

*indicates cut off point

Task #	Worker Rating: Tasks are part of the job (3.5 or higher average rating by workers)
318	5.5
330	5.4
354	5.4
396	5.3
397	5.2
309	4.9
394	4.8
375	4.4
395	4.4
331	4.2
326	4.1
236	4.0
376	3.8
352	3.9
401	3.7
3	3.6
350	3.6
351	3.5

APPENDIX B

KEY TASKS IDENTIFIED IN DELINEATION PROCESS CONTAINED IN APPENDIX A FOR THE THREE OCCUPATIONS

KEY TASKS IDENTIFIED FOR THE OCCUPATION OF GENERAL SECRETARY

TASK NUMBER	TASK
348	Carry out written or oral instructions given by employer.
339	Place telephone memoranda and messages where employer will see them.
401	Type business letters.
402	Type carbon copies.
344	Address letters and packages.
392	Proofread typewritten copy.
407	Type final copy from rough-draft copy.
38	Plan work for one's self.
345	Arrange papers or articles on your own or your employer's desk.
438	File materials.
418	Type memorandums.
192	Write shorthand (any system).
128	Keep employer reminded of engagements, dates, or things to do.
353	Compare copy for legibility and neatness.
361	Make folders and folder titles for files (labels).
367	Operate copying machine (e.g., Xerox, Thermofax, Ozalid).
389	Prepare forms and correspondence.
180	Edit letters dictated by employer.
340	Relay or refer telephone calls to another department.
356	Fold and insert letters in envelopes.
347	Attach pertinent correspondence to incoming mail to refresh employer's memory.
433	Establish or maintain files.
189	Transcribe (type) from shorthand outlines.

KEY TASKS IDENTIFIED FOR THE OCCUPATION OF GENERAL SECRETARY (Continued)

TASK NUMBER	TASK
437	Extract information from files.
470	Open and read mail.
338	Place telephone calls.
346	Assemble and staple duplicated materials.
445	Process and file correspondence.
343	Use directories.
362	Make corrections on original and carbon copies.

KEY TASKS IDENTIFIED FOR THE OCCUPATION OF AUTOMOTIVE MECHANIC

TASK NUMBER	TASK
160	Run compression test.
244	Set ignition timing.
219	Inspect secondary circuit leads, plug wires, distributor cap, and rotor.
220	Inspect and repair ignition switch, resistor, wiring, coil points, and condensor of the primary circuit.
249	Adjust carburetor.
125	Inspect exhaust systems.
143	Replace gaskets and seals.
218	Evaluate alternator, generator, and regulator output.
221	Locate and repair shorts and open circuits in wiring.
242	Service or replace batteries, cables, and battery boxes.
216	Analyze malfunctions in the cranking system.
217	Clean, gap, test spark plugs.
224	Perform operational inspections of lighting systems.
305	Adjust brakes.
308	Bleed brakes.
316	Perform operational brake inspections.
328	Replace brake shoes.
341	Perform visual inspections of suspension systems.
119	Clean engine parts and check for condition.
145	Replace muffler.
225	Repair or replace charging system regulators.
241	Replace turn signal switches.
255	Inspect, clean, and adjust choke unit (automatic and manual).
256	Inspect, service, or replace carburetor air cleaner.
254	Clean or replace fuel filter units.
230	Repair or replace switches.
301	Replace belts and set tension
238	Replace light bulbs.

KEY TASKS IDENTIFIED FOR THE OCCUPATION OF BUSINESS DATA PROGRAMMER

TASK NUMBER	TASK
3	Analyze data processed to make sure that desired information is obtained.
236	Update current source programs.
309	Code routine computer programs.
318	Debug programs.
326	Design report formats.
330	Desk check or debug programs after assembly of compilation.
331	Desk check programming logic for punching errors prior to assembly or compilation.
350	Incorporate standard routines into programs.
351	Incorporate utility routines into programs.
352	Insert standard changes into existing programs.
354	Isolate and correct programming errors discovered during testing.
375	Prepare documentation including formats and layouts for input and output media.
376	Prepare general and detailed flow charts.
394	Revise computer programs.
395	Select appropriate utility programs.
396	Test new computer programs.
397	Test revised computer programs.
401	Write programs for local one-time applications.

APPENDIX C

DICTIONARY OF OCCUPATIONAL TITLES JOB ACTIVITY STATEMENTS FOR THE THREE OCCUPATIONS

DICTIONARY OF OCCUPATIONAL TITLES JOB ACTIVITY STATEMENTS

GENERAL SECRETARY

1. Reads and routes incoming mail.
2. Locates and attaches appropriate file to correspondence to be answered by employer.
3. Takes dictation in shorthand or on stenotype machine.
4. Transcribes notes on typewriter or transcribes from voice readings.
5. Composes routine correspondence.
6. Types routine correspondence.
7. Files correspondence and other records.
8. Answers telephone and gives information to callers.
9. Routes calls to appropriate officials.
10. Places outgoing calls.
11. Greets visitors, ascertains nature of business, and conducts visitors to employer or appropriate person.
12. May not take dictation.
13. May arrange travel schedule and reservations.
14. May compile and type statistical reports.
15. May supervise clerical workers.
16. May record minutes of staff meetings.
17. Schedules appointments for employer.

DICTIONARY OF OCCUPATIONAL TITLES JOB ACTIVITY STATEMENTS

AUTOMOTIVE MECHANIC

1. Examines vehicle and discusses with customer or automobile-repair-service salesman, automobile tester, etc., nature and extent of damage or malfunction.

2. Plans work procedure, using charts, technical manuals, and experience.

3. Raises vehicles, using hydraulic jack or hoist, to gain access to mechanical units bolted to underside of vehicle.

4. Removes unit, such as engine, transmission, or differential, using wrenches and hoist.

5. Disassembles unit, and inspects unit parts for wear using micrometers, calipers, and thickness gauges.

6. Repairs parts such as pistons, rods, gears, values, and bearings using mechanic's handtools.

7. Replaces parts such as pistons, rods, gears, valves, and bearings using mechanic's handtools.

8. Overhauls carburetors, blowers, generators, distributors, starters, and pumps.

9. Replaces carburetors, blowers, generators, distributors, starters, and pumps.

10. Rebuilds parts, such as crankshaft and cylinder blocks, using lathes, shapers, drill presses, and welding equipment.

11. Rewires ignition system.

12. Rewires lights.

13. Rewires instrument panel.

14. Relines and adjusts brakes.

15. Aligns front end.

16. Repairs or replaces shock absorbers.

17. Solders leaks in radiator.

18. Mends damaged body and fenders by hammering out or filling in dents and welding broken parts.

19. Replaces and adjusts headlights.

20. Installs and repairs accessories, such as radios, heaters, mirrors, and windshield wipers.

DICTIONARY OF OCCUPATIONAL TITLES JOB ACTIVITY STATEMENTS

BUSINESS DATA PROGRAMMER

1. Analyzes all or part of workflow chart or diagram representing business problem by applying knowledge of computer capabilities, subject matter, algebra, and symbolic logic to develop sequence of program steps.
2. Confers with supervisor and representatives of departments affected by programs to resolve questions of program intent, output requirements, input data acquisition, extent of automatic programing and coding use and modification, and inclusion of internal checks and controls.
3. Writes detailed logical flow chart in symbolic form to represent work order of data to be processed by computer system, and to describe input, output, and arithmetic and logical operations involved.
4. May convert detailed logical flow chart to language processable by computer.
5. Devises sample input data to provide test of program adequacy.
6. Prepares block diagrams to specify equipment configuration.
7. Observes or runs test of coded program on computer, using actual or sample input data.
8. Corrects program errors by such methods as altering program steps and sequence.
9. Prepares written instructions (run book) to guide operating personnel during production runs.
10. Analyzes, reviews, and rewrites programs to increase operating efficiency or adapt to new requirements.
11. Compiles documentation of program development and subsequent revisions.
12. May specialize in writing programs for one make and type of computer.

APPENDIX D

INTERIM SYNTHESIS OF DICTIONARY OF OCCUPATIONAL TITLES FOR ACTIVITY STATEMENTS AND KEY TASKS FROM TASK ANALYSIS BY AMMERMAN AND OTHERS FOR THE THREE OCCUPATIONS

REVISED DOT ACTIVITY STATEMENTS

GENERAL SECRETARY

1. Carry out written or oral instructions given by employer.
2. Plan work for one's self and arrange/organize work environment.
3. Read and route incoming mail.
4. Answer telephone and give information to callers or route calls to appropriate officials and place outgoing calls.
5. Greet visitors, ascertain nature of business, and conduct visitors to employer or appropriate person.
6. (May) Take dictation in shorthand (any system).
7. Transcribe notes on typewriter or transcribe from voice readings.
8. Compose routine correspondence.
9. Type routine correspondence.
10. File correspondence and other records.
11. Locate and attach appropriate file to correspondence to be answered by employer.
12. Perform duplication services.
13. May arrange travel schedule and reservations.
14. May compile and type statistical reports.
15. May supervise clerical workers.
16. May record minutes of staff meetings.
17. Schedule appointments for employer.

REVISED DOT ACTIVITY STATEMENTS

AUTOMOTIVE MECHANIC

1. Examine vehicle and discuss with customer or automobile-repair-service sales-person or automobile tester or etc. nature and extent of damage or malfunction.

2. Plan work procedures, using charts, technical manuals, and experience.

3. Raise vehicle, using hydraulic jack or hoist, to gain access to mechanical units bolted to underside of vehicle.

4. Remove unit, such as engine, transmission, or differential, using wrenches and hoist.

5. Disassemble and inspect unit parts for wear using micrometers, calipers, and thickness gages.

6. Repair or replace parts such as pistons, rods, gears, valves, and bearings using mechanic's handtools.

7. Overhaul carburetors, blowers, generators, distributors, starters, and pumps.

8. Replace carburetors, blowers, generators, distributors, starters, and pumps.

9. Replace or rebuild parts such as crankshaft and cylinder blocks, using lathes, shapers, drill presses, and welding equipment.

10. Rewire ignition system.

11. Rewire lights.

12. Rewire instrument panel.

13. Reline and adjust brakes.

14. Align front end.

15. Repair or replace shock absorbers.

16. Solder leaks in radiator.

17. Mend damaged body and fenders by hammering out or filling in dents and welding broken parts.

18. Replace and adjust headlights and install and repair accessories such as radio, heater, mirror, and windshield wipers.

REVISED DOT ACTIVITY STATEMENTS

BUSINESS-DATA PROGRAMMERS

1. Analyze all or part of workflow chart or diagram representing business problem(s) by applying knowledge of computer capabilities, subject matter, algebra, and symbolic logic to develop a sequence of program steps.
2. Confer with supervisor and representatives of departments affected by program to resolve questions of program intent, output requirements, input data acquisition, extent of automatic programming and coding use and modification, and inclusion of internal checks and controls.
3. Write detailed logical flow chart in symbolic form to represent work order of data to be processed by computer system, and to describe input, output, and arithmetic and logical operations involved.
4. Convert detailed logical flow chart to language processable by computer.
5. Devise sample input data to provide test of program adequacy.
6. Prepare block diagrams to specify equipment configuration.
7. Observe or run tests of coded program on computer, using actual or sample input data.
8. Correct program errors by such methods as altering program steps and sequence.
9. Prepare written instructions (run book) to guide operating personnel during production runs.
10. Specialize in writing programs for one make and type of computer.
11. Examine, review, and rewrite programs to increase operating efficiency or adapt to new requirements.
12. Compile documentation of program development and subsequent revisions.

APPENDIX E

BORCHER'S TASK JOB DESCRIPTION FOR THE THREE OCCUPATIONS

TASK JOB DESCRIPTION FOR GENERAL SECRETARY (N = 23)

anked by . . . . .PERCENT OF MEMBERS PERFORMING

D-TSK		TASK TITLE	PERCENT OF MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY ALL MEMBERS	CUMULATIVE SUM OF AVERAGE PERCENT TIME SPENT BY ALL MEMBERS
	3	Answer telephone	100.00	1.54	1.54	1.54
	1	Compose correspondence	95.65	1.14	1.09	2.63
K	11	File materials	95.65	1.27	1.21	3.84
I	51	Type addresses on envelopes and/or cards	95.65	1.37	1.31	5.15
	40	Operate typewriter	95.65	1.77	1.69	6.84
	17	Make folders and folder titles for files (labels)	95.65	1.08	1.03	7.87
J	5	Carry out written or oral instructions given by employer	95.65	1.54	1.47	9.35
	1	Address letters and packages	95.65	1.33	1.28	10.62
	15	Place telephone memoranda, messages, etc., where employer will see them	95.65	1.35	1.29	11.92
	12	Fold and insert letters in envelopes	91.30	1.25	1.14	13.06
J	3	Assemble and staple duplicated materials	86.96	1.40	1.22	14.28
	56	Type business letters	86.96	1.47	1.28	15.56
	57	Type carbon copies	82.61	1.49	1.23	16.79
J	6	Change dates on rubber stamps, time stamp machine, and/or calendar daily	82.61	1.05	0.87	17.65
J	4	Attach pertinent correspondence to incoming mail for employer to refresh his memory	82.61	1.11	0.92	18.57
	18	Make corrections on original and carbon copies	82.61	1.16	0.96	19.52
J	23	Operate copying machine (such as Xerox, Thermofax, ozalid)	82.61	1.38	1.14	20.67
	28	Sign employer's mail (his signature)	82.61	0.78	0.65	21.31
	2	Edit letters dictated by employer	78.26	1.02	0.80	22.11
	11	Type minutes of reports of meetings	78.26	1.10	0.86	22.96
C	9	Keep employer reminded of engagements, dates, things to do, etc.	78.26	1.20	0.94	23.91
	13	Write shorthand (any system)	78.26	1.17	0.91	24.83
	10	Compare copy for legibility and neatness	78.26	0.93	0.73	25.56
J	9	Clean and/or tidy own and employer's area	78.26	0.99	0.77	26.33
I	2	Arrange papers or articles on your own and/or your employer's desk	78.26	1.16	0.91	27.24
	[illegible]	Place telephone calls	78.26	1.10	0.86	28.10
	46	Prepare or obtain coffee or refreshments for employer or his guests	78.26	0.95	0.74	28.84
K	18	Process and file correspondence	78.26	1.15	0.90	29.74
I	66	Type labels individually	73.91	1.09	0.81	30.55
	62	Type final copy from rough-draft copy	73.91	1.03	0.76	31.31
K	22	Sort materials for filing	73.91	1.09	0.80	32.12
J	45	Prepare forms and correspondence	73.91	1.24	0.91	33.03
	49	Run errands	73.91	0.77	0.57	33.60
	48	Proofread typewritten copy	73.91	1.26	0.93	34.53
	16	Relay or refer telephone calls to another department	73.91	0.95	0.71	35.24
J	8	Clean typewriter	73.91	0.75	0.56	35.80
	10	Transcribe (type) from shorthand outlines	73.91	1.17	0.86	36.66
	9	Greet callers and/or visitors	69.57	0.93	0.65	37.31
K	20	Search for lost materials in files	69.57	0.63	0.44	37.75
I	58	Type cards (index cards, file cards, "address finder" cards, etc.)	69.57	0.92	0.64	38.39
	12	Extract information from files	69.57	1.02	0.71	39.10
	73	Type memorandums	69.57	1.10	0.77	39.87
L	15	Open and/or read mail	69.57	1.18	0.82	40.69
A	40	Plan work for one's self	69.57	1.02	0.71	41.40

..Continued..

Ranked by . . . . PERCENT OF MEMBERS PERFORMING

D	TSK	TASK TITLE	PERCENT OF MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY ALL MEMBERS	CUMULATIVE SUM OF AVERAGE PERCENT TIME SPENT BY ALL MEMBERS
K	4	Control and manage filing system	65.22	1.03	0.67	42.07
L	5	Distribute incoming and outgoing mail	65.22	0.81	0.53	42.60
I	17	Send and/or receive telegrams and/or cablegrams	65.22	0.64	0.42	43.02
I	19	Use directories	65.22	0.91	0.59	43.61
J	16	Keep desks equipped with office supplies	65.22	0.97	0.63	44.24
J	19	Make notes on incoming mail which employer should see	60.87	1.04	0.63	44.88
K	13	Handle classified or confidential files	60.87	0.70	0.43	45.30
L	34	Use U.S. Zip code directory	60.87	0.73	0.44	45.74
L	30	Take mail to mail room or mail box	60.87	0.78	0.47	46.22
D	4	Dispose of unneeded documents and/or records	60.87	0.77	0.47	46.68
F	14	Write shorthand from more than one person (but only one at a time)	60.87	1.10	0.67	47.35
C	2	Advise employer of illnesses, deaths, births, weddings, etc. of friends and/or associates	56.52	0.73	0.41	47.77
K	7	Establish and/or maintain files	56.52	1.14	0.64	48.41
J	64	Type in outline form	56.52	0.60	0.34	48.75
J	15	Keep calendar marked with appointments for employer at his desk	56.52	0.95	0.53	49.28
I	18	Screen employer's calls	56.52	0.93	0.52	49.81
J	50	Seal envelopes (manually)	56.52	0.86	0.48	50.29
J	22	Operate calculator	52.17	1.19	0.62	50.91
J	55	Type and/or rule tabular material (tables, columns, rows of figures)	52.17	0.81	0.42	51.33
J	75	Type on printed forms	52.17	0.97	0.51	51.84
J	79	Use reference books or manuals	52.17	0.84	0.44	52.28
J	77	Use simple business math	52.17	0.90	0.47	52.75
L	11	Mark, attach, or enclose materials for outgoing mail	52.17	0.78	0.41	53.16
L	7	Forward mail	52.17	0.44	0.23	53.39
C	3	Anticipate needs of employer as to records, papers, etc.	52.17	0.93	0.49	53.87
C	16	Make engagements and appointments for employer	52.17	0.79	0.41	54.29
C	19	Make travel arrangements for employer	52.17	0.80	0.42	54.70
F	8	Take dictation over the telephone	52.17	0.69	0.36	55.07
I	6	Direct people to proper office or department	52.17	0.85	0.44	55.51
H	7	Proofread copy	52.17	1.07	0.56	56.07
B	37	Order supplies of various kinds for the office (from suppliers or central supply department)	52.17	1.01	0.53	56.59
B	25	Handle service calls on equipment	52.17	0.96	0.50	57.09
B	24	Get information from various departments needed for correspondence	52.17	0.90	0.47	57.57
B	11	Compose copy at the typewriter	52.17	0.68	0.35	57.92
A	16	Determine requirements for equipment and supplies	52.17	0.88	0.46	58.38
A	8	Compile one report from numerous small ones	47.83	0.86	0.41	58.79
B	35	Make arrangements for guests and/or visitors (hotel, entertainment, transportation, etc.)	47.83	0.71	0.34	59.13
B	45	Prepare requisitions for supplies or equipment	47.83	0.93	0.44	59.57
B	42	Prepare drafts of correspondence, directives, or reports	47.83	0.81	0.39	59.96
F	7	Take dictation at the typewriter (type dictation as employer dictates)	47.83	0.46	0.22	60.18
C	14	Keep on hand stock of employer's personal stationery, cards, etc.	47.83	1.16	0.55	60.73
D	5	Edit and review correspondence and reports	47.83	1.05	0.50	61.24
L	21	Process incoming mail for routing	47.83	1.09	0.52	61.76
L	28	Stamp incoming mail as to date	47.83	0.61	0.29	62.05
K	16	Merge and/or revise files	47.83	0.74	0.35	62.40
J	32	Operate paper punch	47.83	0.56	0.27	62.67
J	36	Operate 10-key adding machine	47.83	0.72	0.35	63.01

..Continued..

CUMULATIVE SUM OF AVERAGE PERCENT TIME SPENT BY ALL MEMBERS
AVERAGE PERCENT TIME SPENT BY ALL MEMBERS
AVERAGE PERCENT TIME SPENT BY MEMBERS PERFORMING
Ranked by ....PERCENT OF MEMBERS PERFORMING

TSK	TASK TITLE	PERCENT OF MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY ALL MEMBERS	CUMULATIVE SUM OF AVERAGE PERCENT TIME SPENT BY ALL MEMBERS
12	Make introductions	47.83	0.67	0.32	63.34
11	Compile, and/or chart data	47.83	0.87	0.42	63.75
9	Have mail insured, registered or certified	43.48	0.46	0.20	63.96
6	Transcribe (type) from dictaphone	43.48	1.12	0.49	64.44
26	"Screen" visitors or people who want to see your employer	43.48	0.88	0.38	64.82
5	Collect money from office employees for various purposes	43.48	0.76	0.33	65.16
28	Gather data for reports	43.48	0.73	0.32	65.48
35	Make preparations for meetings	43.48	0.99	0.43	65.90
39	Plan record keeping	39.13	0.85	0.33	66.24
17	Develop and improve work methods and procedures	39.13	0.75	0.30	66.53
12	Decide on least expensive and/or most desirable way to communicate (telegram, long distance call, etc.)	39.13	0.52	0.20	66.73
78	Prepare purchase orders-invoices and/or vouchers and/or receipts	39.13	1.08	0.42	67.16
7	Coordinate with other personnel on various matters for employer	39.13	0.88	0.35	67.50
49	Punctuate articles, manuscripts, etc.	39.13	1.23	0.48	67.98
10	Compile periodic reports	39.13	0.60	0.23	68.22
13	Check on supplies (for reordering purposes)	39.13	0.82	0.32	68.53
11	Check bills and/or invoices	39.13	1.27	0.50	69.03
22	Process outgoing mail	39.13	1.14	0.45	69.48
27	Stamp envelopes (manually)	39.13	0.77	0.30	69.78
37	Wrap and tie packages	39.13	0.58	0.23	70.01
36	Weigh items	39.13	0.49	0.19	70.20
26	Sort mail (for different persons)	39.13	1.17	0.46	70.65
25	Sign for registered mail	39.13	0.45	0.18	70.83
14	Keep card indexes of various kinds	39.13	0.84	0.33	71.16
3	Clip and collect magazine articles, or newspapers of interest	39.13	0.57	0.22	71.38
3	Deliver messages	39.13	0.90	0.35	71.73
40	Distribute supplies, forms and publications	34.78	0.65	0.23	71.96
2	Calculate postal rates	34.78	0.80	0.28	72.24
72	Type manuscripts and/or reports	34.78	1.26	0.44	72.68
30	Operate intercom	34.78	0.70	0.24	72.92
7	Follow up on written notices for meetings by telephone	34.78	0.78	0.27	73.19
37	Keep daily attendance of employees	34.78	0.75	0.26	73.45
47	Prepare shipping instructions	34.78	1.35	0.47	73.92
53	Select equipment and supplies to be ordered	34.78	0.79	0.27	74.19
65	Supervise the maintenance of files	34.78	0.93	0.32	74.52
23	Prepare itinerary or schedule for employer's trips	34.78	0.69	0.24	74.76
18	Develop precedures maintenance and disposition of records	34.78	0.60	0.21	74.97
45	Renew newspaper and magazine subscriptions	34.78	0.71	0.25	75.21
6	Check committee membership lists (names, addresses, etc.)	30.43	0.79	0.24	75.45
52	Schedule office machine inspections	30.43	0.52	0.16	75.61
50	Schedule appointments and conferences	30.43	1.13	0.34	75.96
25	Scan newspapers, magazines, trade journals, etc., for employer	30.43	0.81	0.25	76.20
5	Assist in plans for entertaining, receptions, dinners, etc.	30.43	0.56	0.17	76.37
8	Evaluate files, reports, or correspondence	30.43	0.99	0.30	76.67
11	Inspect material received for completeness and/or damages	30.43	0.71	0.22	76.89
1	Acknowledge letters of condolence and congratulation	30.43	0.50	0.15	77.04
56	Send out invitations	30.43	0.78	0.24	77.28
34	Make arrangements for centralized department to duplicate materials	30.43	0.82	0.25	77.52
27	Implement employer's directives	30.43	0.75	0.23	77.75
32	Figure extensions	30.43	1.41	0.43	78.18

..Continued..

Ranked by .... PERCENT OF MEMBERS PERFORMING

D-TSK		TASK TITLE	PERCENT OF MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY ALL MEMBERS	CUMULATIVE SUM OF AVERAGE PERCENT TIME SPENT BY ALL MEMBERS
I	1	Act as a guide to visitors	30.43	0.51	0.15	78.31
H	12	Use proofreading symbols	30.43	0.56	0.17	78.50
H	3	Edit manuscripts	30.43	0.68	0.21	78.71
G	9	Select or order typewriting supplies and equipment (erasers, ribbons, etc.)	30.43	0.70	0.21	78.93
J	37	Operate 10-key printing calculator	30.43	1.43	0.44	79.36
J	47	Prepare travel vouchers	30.43	0.80	0.24	79.60
J	42	Post notices	30.43	0.48	0.15	79.75
J	61	Type fill-ins on duplicated letters or bulletins (form letters, etc.)	30.43	0.70	0.21	79.96
J	52	Type and correct offset masters (mats or multilith)	26.09	0.57	0.15	80.11
K	25	Transfer records to inactive files	26.09	0.72	0.19	80.30
I	10	Handle cranks, beggars, and other undesirables	26.09	0.57	0.15	80.45
I	11	Maintain record of long distance calls	26.09	1.09	0.28	80.73
L	24	Receive, time stamp and route messages	26.09	0.74	0.19	80.93
H	9	Prepare material for printer or publisher	26.09	0.81	0.21	81.14
H	2	Coordinate work with printer to achieve desired layout	26.09	0.51	0.13	81.27
G	16	Compose business reports of any kind	26.09	0.80	0.21	81.48
B	70	Write letters of condolence and congratulations	26.09	0.54	0.14	81.62
B	23	Gather data to fill out questionnaires	26.09	0.47	0.12	81.74
D	10	Follow up released materials	26.09	0.85	0.22	81.96
C	6	Confer with employer on policy	26.09	0.84	0.22	82.18
C	24	Purchase and/or send out Christmas cards, Valentines, or birthday cards for employer	26.09	0.90	0.23	82.41
C	27	Shop for employer	26.09	0.44	0.11	82.53
A	5	Attend conferences, symposiums, or briefings	26.09	0.55	0.14	82.67
A	41	Prepare agenda for meetings	26.09	1.17	0.31	82.98
A	27	Establish procedures for the production and reproduction of forms, reports and publications	26.09	0.53	0.14	83.11
A	24	Establish operating procedures for suspense files	21.74	0.64	0.14	83.25
A	4	Arrange physical layout of office, pictures, furniture, draperies, etc.	21.74	0.53	0.11	83.37
A	2	Arrange itineraries for speakers, salesmen and others	21.74	0.60	0.13	83.50
A	7	Coordinate work activities with other employees or agencies	21.74	0.83	0.18	83.68
C	8	Give checks to employer for signature	21.74	1.10	0.24	83.92
C	13	Keep personal business diary for employer	21.74	1.27	0.28	84.19
C	10	Keep employer's photographs and biographical information for publicity	21.74	0.83	0.18	84.37
E	3	Demonstrate equipment and procedures	21.74	0.45	0.10	84.47
F	30	Operate dictaphone	21.74	1.31	0.28	84.76
B	26	Hear complaints in office and over telephone	21.74	0.70	0.15	84.91
B	54	Select or order furnishings for office	21.74	0.55	0.12	85.03
B	44	Prepare requests for quotations or proposals	21.74	0.87	0.19	85.22
G	23	Compute sales tax	21.74	1.56	0.34	85.56
G	34	Keep books and/or ledger for any purpose	21.74	1.08	0.23	85.79
G	12	Check money orders and checks, as to amount, dates, signatures	21.74	0.97	0.21	86.00
G	5	Approve bills of any kind	21.74	1.43	0.31	86.31
I	2	Act as hostess at company-sponsored teas, coffee hours, parties, etc.	21.74	0.89	0.19	86.51
G	82	Purchase postage	21.74	0.75	0.16	86.67
L	12	Make up, check and distribute mailing list	21.74	0.61	0.13	86.80
J	21	Operate automatic typewriter (such as autotypist, robotype, IBM magnetic tape machine)	21.74	1.04	0.23	87.03
J	31	Operate paper cutter	21.74	0.43	0.09	87.12
J	54	Type and correct stencils (mimeograph process)	21.74	1.21	0.26	87.39

Task Job Description for Automobile Mechanics (N=110)

Ranked by

D-TSK	TASK TITLE	PERCENT OF MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY ALL MEMBERS	CUMULATIVE SUM OF AVERAGE PERCENT TIME SPENT BY ALL MEMBERS
N 2	Adjust and repack front wheel bearing	93.64	0.72	0.67	0.67
N 17	Replace shock absorbers and/or mounting	92.73	0.75	0.70	1.37
M 3	Bleed and/or adjust brakes	91.82	0.75	0.69	2.06
N 7	Check or inspect wheel bearings	90.91	0.82	0.74	2.80
M 20	Replace brake shoes	90.91	0.78	0.69	3.49
M 18	Repair or replace wheel cylinder	90.91	0.74	0.67	4.16
N 15	Replace front wheel bearings grease seal	90.00	0.77	0.69	4.85
M 7	Inspect or turn brake drums	90.00	0.72	0.65	5.49
M 13	Repair or replace master cylinder	89.09	0.66	0.59	6.08
I 22	Replace light bulbs	89.09	0.64	0.57	6.65
I 21	Replace generators or alternators	88.18	0.61	0.54	7.18
I 20	Replace flasher units	88.18	0.59	0.52	7.70
I 19	Replace and adjust distributors	88.18	0.60	0.53	8.23
I 16	Repair or replace switches	88.18	0.60	0.53	8.76
I 15	Remove, service, or replace fuel pumps	88.18	0.58	0.51	9.27
I 8	Inspect, service, or replace carburetor air cleaner	88.18	0.64	0.56	9.83
I 7	Inspect, clean and adjust choke unit (automatic and manual)	88.18	0.62	0.55	10.38
I 1	Adjust carburetor	88.18	0.66	0.58	10.97
I 27	Set ignition timing	88.18	0.72	0.63	11.60
M 19	Replace brake hoses and lines	88.18	0.66	0.58	12.19
I 5	Inspect secondary circuit leads, plug wires, distributor, cap and/or rotor	88.18	0.69	0.61	12.80
I 6	Clean gap and test spark plugs	87.27	0.69	0.60	13.39
M 1	Adjust and/or replace hand brake linkage	87.27	0.59	0.52	13.91
I 6	Clean or replace fuel filter units	87.27	0.62	0.55	14.46
I 24	Replace stop-light switch	86.36	0.56	0.48	14.94
I 28	Test and repair turn-signal units	86.36	0.61	0.53	15.47
I 10	Install carburetors	86.36	0.57	0.49	15.96
I 9	Inspect, service or replace gas tank, cap and sending unit	86.36	0.57	0.49	16.45
I 11	Measure fuel flow and pressure	86.36	0.57	0.50	16.95
I 35	Run compression test	86.36	0.69	0.60	17.54
G 4	Check shifting	85.45	0.67	0.57	18.12
I 1	Adjust headlights	85.45	0.59	0.51	18.62
I 25	Service or replace batteries, cables, and battery boxes	85.45	0.63	0.54	19.16
I 23	Replace starters	85.45	0.60	0.52	19.68
I 12	Repair or replace charging system regulators	85.45	0.60	0.52	20.20
I 8	Inspect and repair ignition switch, resistor, wiring, coil, points and condenser of the primary circuit	85.45	0.64	0.55	20.74
K 12	Replace water pump	85.45	0.64	0.55	21.27
K 10	Replace radiator and/or heater hoses	85.45	0.61	0.52	21.79
K 7	Inspect water hoses	84.55	0.68	0.58	22.37
K 1	Check coolant freezing point	84.55	0.65	0.55	22.92
M 4	Check and/or replace brake pads (disc brakes)	84.55	0.71	0.60	23.52
P 2	Inspect and/or replace thermostat	83.64	0.60	0.50	24.02
I 20	Repair or replace fuel lines and hoses	83.64	0.55	0.46	24.48
K 8	Remove and reinstall radiators	83.64	0.60	0.50	24.98
G 25	Replace transmission mounts	83.64	0.59	0.49	25.48
G 24	Replace rear axle shaft, bearings and/or seal	83.64	0.65	0.55	26.03
G 18	Replace and/or adjust mechanical-type clutch	83.64	0.61	0.51	26.54
I 18	Replace engine mounts	83.64	0.62	0.52	27.06
I 5	Check alternator and generator and regular output	82.73	0.62	0.51	27.57
G 9	Perform operations and/or inspections of drive shafts, u-joints, and center bearings	82.73	0.64	0.53	28.10
I 15	Repair or replace lighting system components	82.73	0.60	0.49	28.59

Task Job Description for Automobile Mechanics (N = 110) - Continued

Ranked by D-TSK		TASK TITLE	PERCENT OF MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY ALL MEMBERS	CUMULATIVE SUM OF AVERAGE PERCENT TIME SPENT BY ALL MEMBERS
I	18	Repair starters	82.73	0.62	0.51	29.12
N	9	Lubricate ball joints	82.73	0.73	0.60	29.72
I	1	Adjust valves	82.73	0.62	0.51	30.23
Q	3	Lubricate vehicles and equipment	82.73	0.62	0.51	30.74
Q	1	Change oil and filters	81.82	0.67	0.55	31.29
I	10	Inspect exhaust systems	81.82	0.68	0.56	31.85
I	22	Repair or service carburetors	81.82	0.61	0.50	32.35
I	8	Clean carburetor	81.82	0.60	0.49	32.84
G	6	Lubricate and/or replace speedometer cable, drive gear and housing	81.82	0.56	0.46	33.29
I	19	Replace flywheel, muffler and/or tail pipe assemblies	81.82	0.65	0.53	33.82
I	21	Replace gaskets and seals	80.91	0.63	0.51	34.33
I	14	Repair generators or alternators	80.91	0.60	0.48	34.82
I	11	Perform operational inspections of lighting systems	80.91	0.61	0.49	35.31
I	26	Service the generator	80.00	0.58	0.46	35.77
K	18	Test thermostat	80.00	0.57	0.45	36.22
K	14	Test and replace coolant pressure caps	80.00	0.58	0.46	36.68
G	1	Adjust external shift linkage on manual transmissions	80.00	0.57	0.45	37.13
I	34	Replace head gaskets	80.00	0.59	0.47	37.61
I	2	Adjust, repair, or replace backup light switches	80.00	0.54	0.43	38.04
G	20	Replace a manual transmission	80.00	0.55	0.44	38.48
G	27	Replace throw-out bearings	80.00	0.59	0.47	38.95
G	16	Repair or replace slip joints or universal joints	80.00	0.56	0.45	39.40
I	3	Check or replace exhaust manifolds	80.00	0.58	0.46	39.86
P	8	Remove, repair and/or replace heater	80.00	0.55	0.36	40.22
M	12	Repair disc brakes	80.00	[illegible]	0.33	40.55
M	9	Perform operational brake inspections	79.09	0.65	0.51	41.06
P	4	Replace heater water control units	79.09	0.58	[illegible]	[illegible]
P	1	Diagnose heating system malfunctions	79.09	0.59	[illegible]	42.28
N	11	Perform visual inspections of suspension systems	79.09	0.90	0.71	42.96
N	10	Lubricate the front and rear suspension	79.09	0.68	[illegible]	[illegible]
I	4	Analyze malfunctions in the cranking system	79.09	0.55	[illegible]	[illegible]
G	7	Lubricate universal joints	79.09	0.60	0.47	44.44
I	23	Replace pan and valve covers	79.09	0.55	0.44	44.88
K	8	Inspect, adjust and/or replace fan	79.09	0.54	0.43	45.31
I	10	Perform operational inspections of electrical systems	79.09	0.64	0.50	45.81
I	13	Repair distributors	79.09	0.56	0.44	46.26
K	9	Replace freeze plugs	78.18	0.53	0.42	46.67
I	31	Replace valve lifters	78.18	0.55	0.43	47.10
P	3	Inspect and replace defroster hose	78.18	0.52	0.41	47.51
P	6	Service heater control components	78.18	0.56	0.44	47.95
I	22	Replace oil pumps	77.27	0.54	0.41	48.36
K	2	Check coolant temperature	77.27	0.59	0.46	48.82
I	14	Remove engines from vehicles	77.27	0.59	0.46	49.28
I	7	Disassemble engines	76.36	0.63	0.48	49.76
I	14	Perform operational inspections of fuel systems	76.36	0.56	0.43	50.19
G	8	Check drive shaft	76.36	0.59	0.45	50.64
G	23	Replace pilot bearings	76.36	0.54	0.41	51.05
M	14	Repair or replace hydraulic power brake units	76.36	0.58	0.44	51.49
I	30	Repair or service crankcase ventilation systems	75.45	0.57	0.43	51.92
I	26	Replace timing gears and chains	75.45	0.59	0.44	52.36
I	1	Analyze or adjust engine performance using engine analyzer	75.45	0.63	0.48	52.84

Task Job Description for Automobile Mechanics (N=110) - Continued

Ranked by ... D-TSK		TASK TITLE	PERCENT OF MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY ALL MEMBERS	CUMULATIVE SUM OF AVERAGE PERCENT TIME SPENT BY ALL MEMBERS
F	27	Replace valves	74.55	0.60	0.45	53.29
G	22	Replace pinion seal	74.55	0.52	0.39	53.68
G	14	Repair or replace differentials	74.55	0.58	0.43	54.11
H	1	Adjust linkage from steering column to automatic transmission	74.55	0.57	0.42	54.53
G	8	Perform operational and/or test inspections of differentials	74.55	0.63	0.47	54.99
G	10	Perform operational manual transmission inspections	74.55	0.56	0.42	55.41
M	16	Repair or replace hydraulic lines and fittings	74.55	0.59	0.44	55.86
L	3	Check steering	74.55	0.80	0.60	56.45
J	24	Service or replace manifold heat controls	74.55	0.52	0.39	56.84
F	5	Clean engine parts and check for condition	74.55	0.60	0.45	57.29
F	16	Replace connecting rods and bearings	74.55	0.57	0.42	57.71
F	9	Grind valves	72.73	0.61	0.45	58.16
N	14	Replace ball joints	72.73	0.73	0.53	58.68
G	19	Replace drive line seals	72.73	0.54	0.39	59.08
F	24	Replace pistons	72.73	0.53	0.39	59.47
F	17	Replace crankshaft and bearings	72.73	0.55	0.40	59.86
H	11	Replace external seals, gaskets, and lines on automatic transmissions	72.73	0.58	0.42	60.28
F	25	Replace rings on pistons	71.82	0.57	0.41	60.69
G	12	Rebuild manual transmission (major repairs)	71.82	0.54	0.39	61.08
M	2	Adjust and/or replace hand brake external band	71.82	0.52	0.38	61.46
J	25	Service or replace units in vacuum systems	71.82	0.54	0.39	61.84
L	1	Adjust worm and sector in steering box	71.82	0.72	0.52	62.36
I	29	Test and rewire dash units	71.82	0.53	0.38	62.74
I	9	Measure resistance in plug wires	70.91	0.59	0.42	63.16
L	5	Lubricate the steering box and linkage	70.91	0.57	0.40	63.56
N	3	Balance wheels and tires	70.91	0.87	0.62	64.18
F	12	Perform operational inspections of positive crankcase ventilation system	70.91	0.58	0.41	64.58
F	6	Diagnose valve train and head malfunctions	70.91	0.58	0.41	65.01
M	17	Repair or replace hydraulic power cylinders	70.00	0.56	0.39	65.40
K	3	Check over flow tank and accessories	70.00	0.59	0.41	65.81
K	13	Solder minor leaks in radiator	70.00	0.53	0.37	66.18
F	32	Resurface valve seats	70.00	0.59	0.41	66.60
F	33	Replace camshaft and/or camshaft bearings	69.09	0.52	0.36	66.96
K	11	Replace variable-speed fan	69.09	0.55	0.38	67.34
I	17	Repair solenoid	69.09	0.55	0.38	67.72
J	23	Repair or service exhaust emission control systems	68.18	0.51	0.35	68.07
L	9	Repair or replace power steering pumps	68.18	0.59	0.40	68.47
L	7	Repair or replace manual steering components	68.18	0.63	0.43	68.90
F	13	Perform operational inspections of engine lubrication system	68.18	0.55	0.38	69.27
O	10	Winterize vehicles	68.18	0.56	0.38	69.65
O	4	Remove, repair or replace tires	67.27	0.72	0.48	70.13
N	8	Inspect and repair front suspension systems	67.27	0.80	0.54	70.67
H	10	Remove and/or install automatic transmission	67.27	0.60	0.40	71.07
G	21	Replace manual transmission gaskets and seals (in-car repairs)	66.36	0.51	0.34	71.41
N	16	Replace front suspension control arms and/or bushings	66.36	0.70	0.46	71.88
J	13	Perform operational inspections of exhaust emission control system	66.36	0.53	0.35	72.23
H	2	Adjust linkage from engine to automatic transmission	65.45	0.56	0.37	72.60
F	20	Replace flywheel ring gears	64.55	0.56	0.36	72.96
L	2	Check or replace steering spindles	64.55	0.67	0.43	73.39
F	4	Clean engines	64.55	0.52	0.34	73.73
G	15	Repair or replace spider gear	63.64	0.53	0.34	74.08

Task Job Description for Automobile Mechanics (N = 110) - Continued

Ranked by D-TSK		TASK TITLE	PERCENT OF MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY ALL MEMBERS	CUMULATIVE SUM OF AVERAGE PERCENT TIME SPENT BY ALL MEMBERS
M	18	Repair or replace hydraulic control valves	63.64	[illegible]	[illegible]	[illegible]
N	13	Repair or replace rear suspension system	62.73	0.63	[illegible]	74.82
I	11	Replace pivot points on steering linkage	62.73	0.68	0.43	75.25
I	8	Repair or replace power steering components	61.82	0.64	0.40	75.64
I	4	Lubricate the power steering	61.82	0.61	0.37	76.02
H	3	Check and/or repair transmission cooling system	61.82	0.54	0.33	76.35
J	3	Analyze for moisture or foreign particle level in fuel system	61.82	0.51	0.32	76.66
N	12	Rebush king pins or link pins	60.91	0.67	0.41	77.07
I	2	Check head for warp	60.91	0.50	0.30	77.38
I	11	Inspect the crankshaft and connecting rod assembly using micrometers and other equipment	59.09	0.54	0.3[illegible]	77.69
I	10	Replace pivot points on power steering linkage	59.09	0.68	0.40	78.09
M	10	Reline brake shoes	58.18	0.62	0.36	78.45
K	4	Chemically clean and flush cooling system	58.18	0.55	0.32	78.77
H	7	Make external adjustment of bands on automatic transmission	57.27	0.60	0.34	79.12
G	13	Repair hydraulic-type clutch	57.27	0.49	0.28	79.40
C	4	Analyze causes of vehicle failures	57.27	0.77	0.44	79.84
P	7	Service or replace circulating heaters	56.36	0.53	0.30	80.14
H	4	Clean and visually inspect transmission	54.55	0.58	0.32	80.46
H	9	Perform operational automatic transmission inspections	53.64	0.59	0.32	80.77
I	15	Repair oil pumps	53.64	0.52	0.28	81.05
G	26	Test and replace out-of-round shaft	52.73	0.56	0.29	81.35
C	16	Inspect tires and wheels	50.00	0.88	0.44	81.78
C	18	Inspect and test windshield-wiper motors, blades, and arms	48.18	0.64	0.31	82.09
I	8	Fit piston pins	48.18	0.49	0.24	82.33
O	11	Service air conditioner control cables and switches	48.18	0.53	0.26	82.58
O	6	Replace air conditioner fan motor	48.18	0.50	0.24	82.82
N	4	Check and align front end	48.18	0.95	0.46	83.28
M	5	Check and turn motor if necessary (disc brakes)	47.27	0.64	0.30	83.59
H	8	Make internal repairs and/or adjustments on automatic transmission	47.27	0.69	0.33	83.91
Q	5	Perform road service	47.27	0.53	0.25	84.16
I	6	Rebuild power steering cylinders	46.36	0.50	0.23	84.39
N	1	Adjust or replace torsion and trunion bars	46.36	0.60	0.28	84.67
G	2	Analyze and repair electrical control circuit and components for over drive unit	44.55	0.47	0.21	84.88
H	6	Inspect and/or repair front pump and components	42.73	0.58	0.25	85.13
H	5	Inspect and/or repair converter	42.73	0.59	0.25	85.38
K	6	Inspect and/or repair blowers on air-cooled engines	42.73	0.45	0.19	85.58
J	2	Adjust governors	42.73	0.42	0.18	85.76
M	8	Inspect and service air tanks and valves	41.82	0.46	0.19	85.95
O	4	Repair and/or replace air conditioning compressor	40.91	0.51	0.21	86.16
J	12	Perform operational checks of governors	40.91	0.45	0.18	86.34
N	6	Check and replace steering damper	40.00	0.67	0.27	86.61
C	8	Estimate cost of vehicle repairs	40.00	0.73	0.29	86.90
I	28	Replace valve guides	39.09	0.53	0.21	87.11
C	20	Perform inspections of vehicle conditions	39.09	0.91	0.35	87.46
I	9	Enter work performed on work order	39.09	0.71	0.28	87.74
Q	7	Service vehicles with fuel or oil	39.09	0.48	0.19	87.93
Q	6	Pick up stalled vehicles	38.18	0.48	0.17	88.10
G	17	Repair, replace, or adjust front-drive axle assemblies	38.18	0.45	0.17	88.26
O	2	Diagnose air conditioning malfunctions	37.27	0.54	0.20	88.46

Task Job Description for Automobile Mechanics (N = 110) - Continued

CUMULATIVE SUM OF AVERAGE PERCENT TIME SPENT BY ALL MEMBERS
AVERAGE PERCENT TIME SPENT BY ALL MEMBERS
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Ranked by . . . PERCENT OF MEMBERS PERFORMING

D-TSK		TASK TITLE	PERCENT OF MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY ALL MEMBERS	CUMULATIVE SUM OF AVERAGE PERCENT TIME SPENT BY ALL MEMBERS
M	11	Repair air brake systems	37.27	0.48	0.18	88.64
M	6	Inspect or repair brake air compressors	37.27	0.47	0.17	88.82
O	1	Check and/or refill system with freon	36.36	0.55	0.20	89.02
O	5	Replace condenser in air conditioning unit	36.36	0.50	0.18	89.20
G	11	Rebuild overdrive unit	35.45	0.45	0.16	89.35
C	5	Conduct spot check on malfunctions	35.45	0.72	0.25	89.61
A	1	Conduct and/or participate in personnel meetings	35.45	0.68	0.24	89.85
O	9	Replace expansion valve in air conditioning unit	34.55	0.49	0.17	90.02
O	8	Replace dryer in air conditioning unit	34.55	0.53	0.18	90.20
O	7	Replace evaporator in air conditioning unit	34.55	0.48	0.17	90.37
J	16	Repair governors	33.64	0.41	0.14	90.51
A	3	Develop troubleshooting procedures for use in locating vehicle malfunction	33.64	0.78	0.26	90.77
N	5	Check and align rear end	32.73	0.81	0.26	91.03
I	3	Complete forms when servicing vehicles	32.73	0.73	0.24	91.27
B	5	Complete work order form	30.91	0.66	0.20	91.48
C	17	Inspect vehicles for mirrors	30.00	0.68	0.20	91.68
D	5	Demonstrate operation of equipment	30.00	0.71	0.21	91.90
O	10	Replace freon control valve and/or diaphragm in air conditioning unit	30.00	0.52	0.16	92.05
O	3	Install air-conditioners in vehicles	29.09	0.47	0.14	92.19
D	15	Train individuals in the job	29.09	0.62	0.18	92.37
E	13	Initiate request for parts	29.09	0.59	0.17	92.54
A	21	Schedule appointments	29.09	0.63	0.18	92.72
A	14	Inspect vehicles for compliance with local laws	29.09	0.56	0.16	92.88
C	13	Inspect vehicles received and/or sold by organization	29.09	0.62	0.18	93.07
Q	2	Inspect, clean and/or repair automobile interiors	29.09	0.44	0.13	93.19
E	12	Initiate and complete work orders	28.18	0.61	0.17	93.36
I	8	Determine actual cost of vehicle repairs	28.18	0.65	0.18	93.55
J	4	Analyze fuel injection problems by means of electrical diagnostic equipment	27.27	0.59	0.16	93.71
B	20	Resolve technical problems	26.36	0.59	0.16	93.86
A	6	Establish equipment and/or special tool requirements	25.45	0.52	0.13	93.99
I	2	Check lubrication and service guide	25.45	0.54	0.14	94.13
I	29	Replace valve seats	24.55	0.41	0.10	94.23
C	2	Analyze maintenance reports on vehicles	24.55	0.60	0.15	94.38
B	7	Control flow of work	23.64	0.63	0.15	94.53
A	10	Establish methods to improve maintenance procedures	22.73	0.52	0.12	94.65
B	16	Orient newly hired personnel	22.73	0.58	0.13	94.78
J	18	Repair or replace fuel injectors	22.73	0.47	0.11	94.88
J	21	Repair or replace wiring harness for electronic fuel injection system	22.73	0.47	0.11	94.99
Q	8	Maintain tire removal equipment	22.73	0.44	0.10	95.09
P	8	Service or replace gas heaters	21.82	0.37	0.08	95.17
J	19	Repair or replace fuel injector pumps	21.82	0.47	0.10	95.27
F	5	Complete requests for procurement of parts	21.82	0.54	0.12	95.39
B	22	Schedule work assignments	21.82	0.56	0.12	95.51
B	23	Supervise mechanic specialist (such as, front end, transmission, brake, and tune-up	20.91	0.63	0.13	95.64
A	4	Develop plans for performing maintenance	20.91	0.53	0.11	95.75
C	6	Direct quality checks of vehicles after maintenance	20.91	0.65	0.14	95.89
A	13	Establish stock level of supplies	20.00	0.55	0.11	96.00
B	3	Check vehicle maintenance for compliance with warranty policies	20.00	0.45	0.09	96.08
E	11	Follow up on requisitions	19.09	0.46	0.09	96.17
I	1	Annotate and process records on vehicles being serviced and repaired	18.18	0.49	0.09	96.26
B	1	Allocate space and equipment	18.18	0.48	0.09	96.35
C	11	Evaluate suggestions	18.18	0.54	0.10	96.45

Task Job Description for Automobile Mechanics (N = 110) - Continued

CUMULATIVE SUM OF AVERAGE PERCENT TIME SPENT BY ALL MEMBERS
AVERAGE PERCENT TIME SPENT BY ALL MEMBERS
AVERAGE PERCENT TIME SPENT BY MEMBERS PERFORMING
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D-TSK		TASK TITLE	PERCENT OF MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY ALL MEMBERS	CUMULATIVE SUM OF AVERAGE PERCENT TIME SPENT BY ALL MEMBERS
B	24	Supervise general mechanics	18.18	0.50	0.09	96.54
C	4	Check maintenance procedures	17.27	0.60	0.10	96.64
E	21	Prepare reports of vehicle defects	17.27	0.47	0.08	96.72
D	2	Brief personnel on changes in methods and procedures	17.27	0.55	0.10	96.82
C	19	Prepare inspection reports	16.36	0.57	0.09	96.91
E	26	Spot check service orders	16.36	0.56	0.09	97.00
I	19	Plan, schedule, and control maintenance of vehicles	16.36	0.55	0.09	97.09
F	4	Complete labor time cards	16.36	0.51	0.08	97.18
B	19	Resolve personnel problems	16.36	0.41	0.07	97.24
B	2	Assign individuals to job positions	16.36	0.52	0.09	97.33
B	17	Prepare requests for shop maintenance	15.45	0.47	0.07	97.40
B	11	Implement plans to check compliance with maintenance manual	15.45	0.39	0.06	97.46
B	10	Implement changes in maintenance procedures	15.45	0.37	0.06	97.52
C	3	Check equipment inventories	14.55	0.56	0.08	97.60
A	11	Establish operational procedures	14.55	0.50	0.07	97.68
E	27	Verify and complete operator's inspection guide and trouble report	14.55	0.42	0.06	97.74
J	17	Repair or replace electrical fuel injection computer	14.55	0.54	0.08	97.81
F	25	Review records to see that maintenance is accomplished according to priority	13.64	0.47	0.06	97.88
G	3	Balance drive shaft (in-car)	13.64	0.41	0.06	97.93
C	14	Inspect vehicles and apply materials for corrosion and rust control	13.64	0.47	0.06	98.00
B	18	Prepare requisitions for equipment	13.64	0.48	0.07	98.06
A	20	Prepare job descriptions	13.64	0.52	0.07	98.13
A	12	Establish personnel requirements	12.73	0.54	0.07	98.20
A	8	Establish local procedures for preparing records and report	12.73	0.42	0.05	98.25
I	17	Maintain vehicle warranty records	12.73	0.42	0.05	98.31
F	18	Monitor workload and downtime of vehicles in shop for repair	11.82	0.53	0.06	98.37
A	17	Plan shop safety programs	11.82	0.48	0.06	98.43
G	9	Maintain washrack equipment	11.82	0.46	0.05	98.48
A	16	Plan emergency procedures for use during unusual maintenance load	10.91	0.57	0.06	98.54
A	18	Plan on-job training programs	10.91	0.61	0.07	98.61
B	6	Conduct safety briefings	10.91	0.34	0.04	98.64
B	14	Initiate personnel actions	10.91	0.53	0.06	98.70
C	12	Evaluate training programs	10.91	0.43	0.05	98.75
B	26	Supervise servicing and preparation personnel	10.91	0.60	0.07	98.82
C	10	Evaluate safety programs	10.00	0.36	0.04	98.85
B	8	Coordinate release of special equipment for testing and adjustment	10.00	0.37	0.04	98.89
A	7	Establish shop inspection system	10.00	0.49	0.05	98.94
D	4	Counsel newly-assigned employees on promotion and educational opportunities	10.00	0.32	0.03	98.97
D	6	Determine training requirements	9.09	0.36	0.03	99.00
D	3	Counsel individuals on training progress	9.09	0.50	0.05	99.05
E	23	Prepare vehicle deadline and work stoppages reports	9.09	0.61	0.06	99.10
E	15	Maintain daily work control logs or status boards	9.09	0.54	0.05	99.15
E	7	Compute average cost rates for mechanics	9.09	0.45	0.04	99.19
I	6	Complete unsatisfactory reports	9.09	0.33	0.03	99.22
B	15	Monitor safety programs	9.09	0.37	0.03	99.25
B	13	Implement training programs	8.18	0.49	0.04	99.29
A	[illegible]	Establish local production standards	8.18	0.47	0.04	99.33
A	2	Construct organizational or functional charts	8.18	0.37	0.03	99.36
A	15	Plan and establish operational budgets	8.18	0.48	0.04	99.40
C	9	Evaluate individuals for promotions, or reassignment	8.18	0.41	0.03	99.43
F	10	Establish or maintain correspondence files	8.18	0.30	0.02	99.45

Task Job Description for Automobile Mechanics (N=110) - Continued

Ranked by D-TSK		TASK TITLE	PERCENT OF MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY MEMBERS PERFORMING	AVERAGE PERCENT TIME SPENT BY ALL MEMBERS	CUMULATIVE SUM OF AVERAGE PERCENT TIME SPENT BY ALL MEMBERS
D	7	Evaluate need for individual or group training	8.18	0.40	0.03	99.49
D	10	Monitor on-job-training programs	7.27	0.48	0.04	99.52
D	8	Evaluate training standards	7.27	0.43	0.03	99.55
F	14	Maintain charts, tables, and graphs on maintenance trends	7.27	0.38	0.03	99.58
B	12	Implement plans to report work stoppages	7.27	0.33	0.02	99.60
B	21	Schedule vacations	7.27	0.33	0.02	99.63
E	22	Prepare time and attendance or personnel rosters	6.36	0.34	0.02	99.65
F	16	Maintain publication files	6.36	0.44	0.03	99.68
I	24	Review Commercial credit slips	6.36	0.44	0.03	99.71
D	14	Supervise training programs	6.36	0.53	0.03	99.74
D	13	Rotate duty assignments of personnel for training purposes	6.36	0.39	0.02	99.77
D	12	Rate progress of individuals in training	6.36	0.45	0.03	99.79
F	20	Prepare medical or accident reports	5.45	0.40	0.02	99.82
D	9	Maintain training progress and qualification records	5.45	0.28	0.02	99.83
C	18	Maintain surveillance over contract maintenance programs	5.45	0.47	0.03	99.86
C	7	Draft changes to the maintenance evaluation programs	5.45	0.46	0.03	99.88
B	4	Complete mechanic proficiency ratings	5.45	0.45	0.02	99.91
A	19	Plan procedures for leased contract maintenance	4.55	0.36	0.02	99.92
B	25	Supervise vehicle body and fender repairman	4.55	0.52	0.02	99.95
B	9	Draft correspondence	4.55	0.31	0.01	99.96
D	11	Prepare or evaluate job proficiency guides	4.55	0.31	0.01	99.97
D	1	Assign on-job-training supervisors	3.64	0.31	0.01	99.99
A	5	Develop working agreements with vehicle leasing organizations	3.64	0.32	0.01	100.00

APPENDIX F

TOTAL AGGREGATION PROCESS ACROSS THREE JOB ACTIVITY SOURCES: DICTIONARY OF OCCUPATIONAL TITLES, AMMERMAN & BORCHER

COMPARATIVE DATA ANALYSIS ACROSS THREE JOB ACTIVITY SOURCES

GENERAL SECRETARY

DOT: 1. Reads and routes incoming mail.

Ammerman et al: 470(>)

Borcher et al: L-15(<); L-5(>); L-7(<); L-21(<);
L-25(<); L-26(<); L-28(<); I-17(>);
D-11(<).

DOT: 2. Locates and attaches appropriate files to correspondence to be answered by employer.

Ammerman et al: 347(=); 437(<).

Borcher et al: J-4(=); J-19(<); C-3(<); B-24(<).

DOT: 3. Takes dictation in shorthand or on Stenotype machine.

Ammerman et al: 192(=)

Borcher et al: F-13(=); F-14(>); F-8(>); F-7(>).

DOT: 4. Transcribes notes on typewriter or transcribes from voice readings.

Ammerman et al: 189(<)

Borcher et al: F-10(<); F-6(<); F-30(<).

DOT: 5. Composes routine correspondence.

Ammerman et al: 0

Borcher et al: B-11(>); G-16(>); F-1(=); A-8(>).

DOT: 6. Types routine correspondence.

Ammerman et al: 401(<); 402(<); 344(<); 407(=); 418(<);
353(>); 389(<).

Borcher et al: J-51(<); J-40(<); J-1(<); J-56(=);
J-57(>); F-11(>); J-10(>); J-66(>);
J-62(>); J-58(>); J-73(>); J-64(>);
J-55(>); J-75(>); G-78(>); J-72(>);
J-61(>); J-52(>); J-54(>); J-52(>);
J-18(>); J-21(<).

DOT: 7. Files correspondence and other records.

Ammerman et al: 438(=); 433(>); 445(=).

Borcher et al: K-11(=); J-17(>); K-22(>); K-20(<);
K-7(>); K-16(>); B-65(>); B-8(>);
K-25(>); K-4(>); K-13(>); K-18(>).

DOT: 8. Answers telephone and gives information to callers.

Ammerman et al: 339(>); 340(>); 338(>).

Borcher et al: I-3(<); I-15(>); I-14(>); I-16(>);
I-30(>).

DOT: 9. Routes calls to appropriate officials.

Ammerman et al: 339(>); 340(>).

Borcher et al: I-16(=); I-18(>); I-30(<).

DOT: 10. Places outgoing calls.

Ammerman et al: 338(=)

Borcher et al: I-14(=); I-11(>).

DOT: 11. Greets visitors, ascertains nature of business and conducts visitors to employer or appropriate person.

Ammerman et al: 0

Borcher et al: I-9(<); I-6(<); I-12(<); I-1(>);
I-10(>); C-26(<).

DOT: 12. May not take dictation.

Ammerman et al: 0

Borcher et al: 0

DOT: 13. May arrange travel schedule and reservations.

Ammerman et al: 0

Borcher et al: C-19(=); B-35(<); C-23(<); J-47(>).

DOT: 14. May compile and type statistical reports.

Ammerman et al: 0

Borcher et al: G-16(<); A-8(<); J-11(<); A-28(<); B-10(<); J-75(<); J-55(<).

DOT: 15. May supervise clerical workers.

Ammerman et al: 0

Borcher et al: C-7(<); G-37(<); B-65(<); B-27(<); A-7(<); A-8(<).

DOT: 16. May record minutes of staff meetings.

Ammerman et al: 0

Borcher et al: F-11(>)

DOT: 17. Schedule appointments for employer.

Ammerman et al: 128(>).

Borcher et al: C-9(>); J-15(>); C-16(=); A-50(>).

COMPARATIVE DATA ANALYSIS ACROSS THREE JOB ACTIVITY SOURCES

AUTOMOTIVE MECHANIC

DOT: 1. Examines vehicle and discusses with customer or automobile-repair-service salesperson; automobile tester, etc. nature and extent of damage or malfunction.

Ammerman et al: 216(<); 341(<); 224(<); 219(<); 125(<); 218(<); 316(<); 255(<).

Borcher et al: I-3(<); C-1(<); E-21(>); C-8(>).

DOT: 2. Plans work procedure using charts, technical manuals, and experience.

Ammerman et al: 0

Borcher et al: A-21(>); B-7(>); B-22(>); A-4(<); E-1(<); E-19(>); E-25(>); E-15(>).

DOT: 3. Raises vehicle, using hydraulic jack or hoist, to gain access to mechanical units bolted to underside of vehicle.

Ammerman et al: 0

Borcher et al: G-24(<); F-10(<); N-11(<).

DOT: 4. Removes unit, such as engine, transmission or differential, using wrenches and hoist.

Ammerman et al: 119(>).

Borcher et al: F-18(<); G-25(<); G-20(<); F-14(<); F-4(<).

DOT: 5. Disassemble unit and inspect unit parts for wear using micrometers, calipers, and thickness gauges.

Ammerman et al: 143(<); 218(<); 119(<); 255(<).

Borcher et al: F-5(<); F-4(<); G-10(<); G-20(<); G-25(<); F-14(<).

DOT: 6. Repairs parts, such as pistons, rods, gears, valves, and bearings using mechanic's hand tools.

Ammerman et al: 230(<).

Borcher et al: F-16(<); M-13(<).

DOT: 7. Replaces parts, such as, pistons, rods, gears, valves, and bearings using mechanic's hand tools.

Ammerman et al: 143(<); 241(<); 230(<).

Borcher et al: F-24(<); N-14(<); N-15(<).

DOT: 8. Overhauls carburetors, blowers, generators, distributors, starters, and pumps.

Ammerman et al: 249(<); 218(<).

Borcher et al: I-15(<); I-16(<); I-21(<).

DOT: 9. Replaces carburetors, blowers, generators, distributors, starters, and pumps.

Ammerman et al: 256(<); 254(<); 225(<).

Borcher et al: I-21(<); I-23(<); I-26(<); I-28(<); I-16(<).

DOT: 10. Rebuilds parts, such as, crankshaft and cylinder blocks, using lathes, shapers, drill presses, and welding equipment.

Ammerman et al: 0

Borcher et al: F-18(<); F-19(<).

DOT: 11. Rewires ignition system.

Ammerman et al: 244(<); 220(>); 225(<).

Borcher et al: I-33(<); I-9(>).

DOT: 12. Rewires lights.

Ammerman et al: 224(>).

Borcher et al: I-18(>); I-19(>).

Automotive Mechanic (Continued)

DOT: 13. Rewires instrument panel.

Ammerman et al: 221(>).

Borcher et al: I-35(<); I-37(>).

DOT: 14. Relines and adjusts brakes.

Ammerman et al: 305(<); 308(<); 316(<); 328(<).

Borcher et al: M-1(<); M-2(<); M-3(<); M-4(<); M-5(<); M-6(<); M-7(<); M-8(<); M-9(<); M-10(<); M-11(<); M-12(<); M-13(<); M-14(<); M-15(<); M-16(<); M-17(<); M-18(<); M-19(<); M-20(<); M-21(<); M-22(<); M-23(<); M-24(<); M-25(<); M-26(<).

DOT: 15. Aligns front end.

Ammerman et al: 0

Borcher et al: N-1(<); N-2(<); N-4(=); N-5(>); N-7(<); N-9(<).

DOT: 16. Repairs or replaces shock absorbers.

Ammerman et al: 341(>).

Borcher et al: N-9(>); N-10(>); N-11(>); N-13(>); N-14(>); N-15(>); N-16(>); N-17(=).

DOT: 17. Solders leaks in radiator.

Ammerman et al: 0

Borcher et al: K-14(=); K-1(>); K-2(>); K-3(>); K-4(>); K-5(>); K-6(>); K-7(>); K-8(>); K-9(>); K-10(>); K-11(>); K-12(>); K-13(>); K-15(>); K-16(>); H-9(>); H-17(>); H-6(>).

DOT: 18. Mends damaged body and fenders by hammering out or filling in dents and welding broken parts.

Ammerman et al: 0

Borcher et al: 0

DOT: 19. Replaces and repairs headlights.

Ammerman et al: 241(>); 224(>); 238(>); 230(>).

Borcher et al: I-1(<); I-2(>); I-3(>); I-9(>); I-10(>); I-12(>); I-13(>); I-17(>); I-19(>); I-25(>); I-27(<).

DOT: 20. Installs and replaces accessories such as radios, heaters, mirrors, and windshield wipers.

Ammerman et al: 0

Borcher et al: I-35(>); P-1(>); P-2(>); P-3(>); P-4(>); P-5(>); P-6(>); P-7(>); P-8(>); O-3(>).

COMPARATIVE DATA ANALYSIS ACROSS THREE JOB ACTIVITY SOURCES

BUSINESS DATA PROGRAMMER

DOT: 1. Analyzes all or part of workflow chart or diagram representing business problem by applying knowledge of computer capabilities, subject matter, algebra, and symbolic logic to develop sequence of program steps.

Ammerman et al: 395(<)

Borcher et al: K-29(>); K-2(<); K-60(<); K-58(<); K-33(<).

DOT: 2. Confers with supervisor and representatives of departments affected by program to resolve questions of program intent, output requirements, input data acquisition, extent of automatic programming and coding use and modification, and internal checks and controls.

Ammerman et al: 395(<); 309(<); 3(<).

Borcher et al: K-60(<); K-65(<); K-58(<); K-13(<); K-48(<); K-57(<); K-2(<); K-3(<); K-29(<).

DOT: 3. Writes detailed logical flow chart in symbolic form to represent work order of data to be processed by computer system, and to describe input, output, and arithmetic and logical operations involved.

Ammerman et al: 376(=)

Borcher et al: K-55(<); K-53(=); K-51(=); K-28(=); K-30(<).

DOT: 4. May convert detailed logical flow chart to language processable by computer.

Ammerman et al: 309(<); 394(<).

Borcher et al: K-59(<); K-9(<); K-11(<); K-27(<); K-43(<); K-8(<); K-1(<).

DOT: 5. Devises sample input data to provide test of program adequacy.

Ammerman et al: 396(>); 397(>).

Borcher et al: K-5(>); K-62(>); K-61(>); K-56(=); K-3(>).

Business Data Programmer (Continued)

DOT: 6. Prepares block diagrams to specify equipment configuration.

Ammerman et al: 0

Borcher et al: K-54(<); K-13(>); K-55(=); K-28(<).

DOT: 7. Observes or runs tests of coded program on computer, using actual or sample input data.

Ammerman et al: 396(=); 397(=); 354(>).

Borcher et al: K-56(>); K-5(>); K-62(=); K-61(=); K-3(<); K-39(>).

DOT: 8. Corrects program errors by such methods as altering program steps and sequence.

Ammerman et al: 318(<); 330(<); 331(<); 354(=).

Borcher et al: K-5(<); K-39(=); K-25(<); K-26(<).

DOT: 9. Prepares written instructions (run book) to guide operating personnel during production runs.

Ammerman et al: 375(<); 401(<).

Borcher et al: D-7(>); K-54(<); K-52(<); K-56(=); K-65(<); K-49(=).

DOT: 10. Analyzes, reviews and rewrites programs to increase operating efficiency or adapt to new requirements.

Ammerman et al: 236(=); 352(=); 351(<); 350(<); 394(<).

Borcher et al: K-32(<); K-33(<); K-58(=); K-48(=); K-34(<); K-36(<); K-57(<); K-41(<); K-35(<); K-37(=); K-59(<).

DOT: 11. Compile documentation of program development and subsequent revisions.

Ammerman et al: 375(=).

Borcher et al: K-42(>); K-41(>); K-4(>); K-52(=).

DOT: 12. May specialize in writing programs for one make and type of computer.

Ammerman et al: 0

Borcher et al: 0

APPENDIX G

PRE-PILOT INSTRUMENT USED IN FIELD REVIEW

INSTRUCTIONS FOR RATERS/REVIEWERS

The following questionnaire is to be used as one part of a research study entitled "Relating the Capabilities of the Handicapped to the Human Attribute Requirements of Jobs." The purpose of the study is to develop profiles (for specific occupations) relating job requirements in terms of human characteristics to the capabilities of persons with differing handicapping conditions. These profiles will be designed for use by counselors and placement officers who are assisting handicapped persons in making career choices, planning individual educational programs, selecting training and/or employment sites, and the like. The job-activities listed in the questionnaire have been derived through the aggregation of data from three major sources.[1] The purpose of the Job-Activities Questionnaire is to identify the key aggregated job activities within the occupation. Your input will be used to refine the instrument for field testing with workers and supervisors within the occupation.

In order to complete the questionnaire you are asked to:

(1) Read each job activity statement;

(a) Indicate any changes you would recommend in the statement or its content;

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[1] USDOL Dictionary of Occupational Titles, Vol. 1, 1965.

Harry L. Ammerman and Frank C. Pratzner. Occupational Survey Report on Business Data Programmers; Occupational Survey Report on Automotive Mechanics; Occupational Survey Report on General Secretaries, Columbus: The Center for Vocational Education, 1974.

Sidney D. Borcher and John W. Jogner. Secretarial Science Occupational Performance Survey; Automotive Mechanics Occupation Performance Survey; Data Programmers, Occupational Performance Survey, Columbus: The Center for Vocational Education, 1973.

OCCUPATION: General Secretary

SAMPLE

RATING SCALE

In relation to this occupation the worker's ability to perform the job-activity is

0 Not important
1 Of little importance
2
3
4 Important
5
6
7 Very important

JOB-ACTIVITIES (Aggregated Tasks)	RATING	SUGGESTED CHANGE IN JOB-ACTIVITY STATEMENT
1. Carry out written or oral instructions given by employer or supervisor.	0 1 2 3 4 5 6 7	1.
2. Plan work for one's self and arrange/organize the work environment.	0 1 2 3 4 5 6 7	2.
3. Obtain, open and/or read, and route incoming mail.	0 1 2 3 4 5 6 7	3.
4. Prepare correspondence and/or packages for mailing, including addressing and packaging.	0 1 2 3 4 5 6 7	4.
5. Answer telephone, give information to caller, screen calls for personnel, route calls to appropriate personnel, place outgoing calls, and maintain records of long distance calls.	0 1 2 3 4 5 6 7	5.
6. Greet visitors, ascertain nature of business, and/or refer visitors to appropriate personnel.	0 1 2 3 4 5 6 7	6.
7. Take dictation in shorthand (any system).	0 1 2 3 4 5 6 7	7.
8. Use typewriter in transcribing from notes or voice recordings.	0 1 2 3 4 5 6 7	8.
9. Compose routine correspondence and/or reports.	0 1 2 3 4 5 6 7	9.
10. Type routine correspondence and/or reports.	0 1 2 3 4 5 6 7	10.
11. Type envelopes, cards, manuscripts, labels, memos, charts, forms, and/or stencils.	0 1 2 3 4 5 6 7	11.
12. Establish and/or maintain files of correspondence and other records.	0 1 2 3 4 5 6 7	12.
13. Merge and/or revise files.	0 1 2 3 4 5 6 7	13.
14. Locate and attach related files or other pertinent information to correspondence to be answered by appropriate personnel.	0 1 2 3 4 5 6 7	14.
15. Establish procedures and/or perform duplication services.	0 1 2 3 4 5 6 7	15.
16. Arrange travel schedule, make travel reservations and prepare travel vouchers for personnel.	0 1 2 3 4 5 6 7	16.

OCCUPATION: General Secretary

SAMPLE

RATING SCALE

In relation to this occupation the worker's ability to perform the job-activity is

0 Not important
1 Of little importance
2
3
4 Important
5
6
7 Very important

JOB-ACTIVITIES (Aggregated Tasks)	RATING	SUGGESTED CHANGE IN JOB-ACTIVITY STATEMENT
17. Compile and type statistical tables and/or statistical reports.	0 1 2 3 4 5 6 7	17.
18. Supervise clerical workers.	0 1 2 3 4 5 6 7	18.
19. Record and/or type meetings minutes.	0 1 2 3 4 5 6 7	19.
20. Schedule appointments for personnel as appropriate and/or remind those persons of dates, engagements, and other scheduled activities.	0 1 2 3 4 5 6 7	20.
21. Prepare requisitions, select and order supplies, establish acquisition procedures, and distribute incoming materials.	0 1 2 3 4 5 6 7	21.
22. Edit correspondence, reports, and manuscripts and check spelling and punctuation for personnel, as appropriate.	0 1 2 3 4 5 6 7	22.

COMMENTS:

General:

Instrument Rating Scale:

Suggested Additions to the Job-Activity Listing:
(Please utilize the above rating scale.)

23. 0 1 2 3 4 5 6 7
24. 0 1 2 3 4 5 6 7
*25. 0 1 2 3 4 5 6 7

*Use reverse side of this page for additional Job-Activities. Please be sure to rate each addition.

OCCUPATION: Automotive Mechanic

SAMPLE

RATING SCALE

In relation to this occupation the worker's ability to perform the job-activity is

0 Not important
1 Of little importance
2
3
4 Important
5
6
7 Very important

JOB-ACTIVITIES (Aggregated Tasks)	RATING	SUGGESTED CHANGE IN JOB-ACTIVITY STATEMENT
1. Examine (inspect/analyze) vehicle and discuss with customer or automobile-repair-service salesperson or automobile tester, or etc. nature and extent of damage or malfunction.	0 1 2 3 4 5 6 7	1.
2. Plan work procedures, using charts, technical manuals, and experience.	0 1 2 3 4 5 6 7	2.
3. Raise vehicle, using hydraulic jack or hoist, to gain access to mechanical units bolted to underside of vehicle.	0 1 2 3 4 5 6 7	3.
4. Remove unit, such as engine, transmission, or differential, using wrenches and hoist.	0 1 2 3 4 5 6 7	4.
5. Disassemble and inspect unit parts for wear using micrometers, calipers, and thickness gauges.	0 1 2 3 4 5 6 7	5.
6. Repair or replace parts such as pistons, rods, gears, valves, and bearings using mechanic's handtools.	0 1 2 3 4 5 6 7	6.
7. Overhaul blowers, generators, distributors, and starters.	0 1 2 3 4 5 6 7	7.
8. Repair and/or replace blowers, generators, distributors, starters, and other electrical system components.	0 1 2 3 4 5 6 7	8.
9. Replace or rebuild parts such as crankshaft and cylinder blocks, using lathes, shapers, drill presses, and/or welding equipment.	0 1 2 3 4 5 6 7	9.
10. Rewire ignition system.	0 1 2 3 4 5 6 7	10.
11. Replace or repair lighting system components such as head, tail, and interior lights.	0 1 2 3 4 5 6 7	11.
12. Rewire or replace instrument panel components such as speedometer and windshield wiper switch.	0 1 2 3 4 5 6 7	12.
13. Reline, adjust, or replace parts within the braking system such as drums, shoes, and/or master cylinder.	0 1 2 3 4 5 6 7	13.

OCCUPATION: Automotive Mechanic

SAMPLE

RATING SCALE

In relation to this occupation the worker's ability to perform the job-activity is

0 Not important
1 Of little importance
2
3
4 Important
5
6
7

JOB-ACTIVITIES (Aggregated Tasks)	RATING	SUGGESTED CHANGE IN JOB-ACTIVITY STATEMENT
14. Inspect and align front and/or rear ends and/or adjust or replace parts such as torsion and trunion bars, ball joints, bearings, and steering damper.	0 1 2 3 4 5 6 7	14.
15. Inspect, repair and/or lubricate front and/or rear suspension systems and repair or replace parts, such as ball joints, shock absorbers, front wheel bearings grease seal, and front suspension control arms and bushings.	0 1 2 3 4 5 6 7	15.
16. Inspect, repair, and/or replace parts in the cooling system and/or air conditioner system.	0 1 2 3 4 5 6 7	16.
17. Install and/or replace accessories such as radios, mirrors, and windshield wipers.	0 1 2 3 4 5 6 7	17.
18. Repair and/or replace parts in the fuel system such as pumps, manifold, and carburetor.	0 1 2 3 4 5 6 7	18.
19. Maintain, adjust and/or repair standard and power steering units.	0 1 2 3 4 5 6 7	19.
20. Remove, repair, replace, and/or balance tires.	0 1 2 3 4 5 6 7	20.
21. Replace parts, such as oil pumps, flywheel, gaskets and seals, camshaft, and engine mounts.	0 1 2 3 4 5 6 7	21.
22. Inspect, repair or replace exhaust system components.	0 1 2 3 4 5 6 7	22.

COMMENTS:

General:

Instrument Rating Scale:

Suggested Additions to the Job-Activity Listing:
(Please utilize the above rating scale.)

23. 0 1 2 3 4 5 6 7
24. 0 1 2 3 4 5 6 7
*25. 0 1 2 3 4 5 6 7

*Use reverse side of this page for additional Job-Activities. Please be sure to rate each addition.

OCCUPATION: Business-Data Programmer

SAMPLE

RATING SCALE:

In relation to this occupation the worker's ability to perform the job-activity is

0 Not important
1 Of little importance
2
3
4 Important
5
6
7 Very important

JOB-ACTIVITIES (Aggregated Tasks)	RATING	SUGGESTED CHANGE IN JOB-ACTIVITY STATEMENT
1. Analyze all or part of workflow chart or diagram representing business problem(s) by applying knowledge of computor capabilities, subject matter, algebra, and symbolic logic to develop a sequence of program steps.	0 1 2 3 4 5 6 7	1.
2. Confer with supervisor and other appropriate personnel affected by program to resolve questions of program intent, output requirements, input data for ordering goods and services extent of automatic programing and coding use and modification, and inclusion of internal checks and controls.	0 1 2 3 4 5 6 7	2.
3. Write detailed logical flow chart in symbolic form to represent work order of data to be processed by computor system, and to describe input, output, and arithmetic and logical operations involved.	0 1 2 3 4 5 6 7	3.
4. Convert detailed logical flow chart to language processable by computor.	0 1 2 3 4 5 6 7	4.
5. Devise sample input data to provide test of program adequacy.	0 1 2 3 4 5 6 7	5.
6. Prepare block diagrams to specify equipment arrangement.	0 1 2 3 4 5 6 7	6.
7. Observe or run tests of coded program on computor, using actual or sample input data.	0 1 2 3 4 5 6 7	7.
8. Correct program errors by such methods as altering program steps and sequence.	0 1 2 3 4 5 6 7	8.
9. Prepare written instructions (run book) to guide operating personnel during production runs.	0 1 2 3 4 5 6 7	9.
10. Select appropriate utility programs.	0 1 2 3 4 5 6 7	10.
11. Write programs for local one-time use.	0 1 2 3 4 5 6 7	11.
12. Write programs for one make and type of computor.	0 1 2 3 4 5 6 7	12.
13. Examine, analyze, review, and rewrite programs to increase operating efficiency or adapt to new requirements.	0 1 2 3 4 5 6 7	13.

OCCUPATION: Business-Data Programmer

SAMPLE

RATING SCALE

In relation to this occupation the worker's ability to perform the job-activity is

0 Not important
1 Of little importance
2
3
4 Important
5
6
7 Very important

JOB-ACTIVITIES (Aggregated Tasks)	RATING	SUGGESTED CHANGE IN JOB-ACTIVITY STATEMENT
14. Prepare and analyze documentation including formats and layouts for input and output media.	0 1 2 3 4 5 6 7	14.
15. Read and interpret regulations, manuals, or administrative orders.	0 1 2 3 4 5 6 7	15.
16. Desk check or debug programs after assembly of compilation.	0 1 2 3 4 5 6 7	16.
17. Design report formats.	0 1 2 3 4 5 6 7	17.
18. Code routine computor programs.	0 1 2 3 4 5 6 7	18.
19. Insert standard changes into existing programs.	0 1 2 3 4 5 6 7	19.
20. Code programs using more than one language and determine most applicable program language for problems.	0 1 2 3 4 5 6 7	20.
21. Supervise data services functions and automatic data processing equipment operations including analyzing, planning, and monitoring company operations and evaluating processing procedures and data.	0 1 2 3 4 5 6 7	21.

COMMENTS:

General:

Instrument Rating Scale:

Suggested Additions to the Job-Activity Listing:
(Please utilize the above rating scale.)

23. 0 1 2 3 4 5 6 7

24. 0 1 2 3 4 5 6 7

*25. 0 1 2 3 4 5 6 7

*Use reverse side of this page for additional Job-Activities. Please be sure to rate each addition.

APPENDIX H

FINAL JOB ACTIVITY STATEMENTS
FOR THE THREE OCCUPATIONS

Final Job Activity List

General Secretary

1. Carry out written or oral instructions given by employer or supervisor.
2. Plan work for one's self and arrange/organize the work environment.
3. Obtain, open and/or read, and route incoming mail.
4. Prepare correspondence and/or packages for mailing, including addressing and packaging.
5. Answer telephone, give information to caller, screen calls for personnel, route calls to appropriate personnel, place outgoing calls, and maintain records of long distance calls.
6. Greet visitors, ascertain nature of business, and/or refer visitors to appropriate personnel.
7. Take dictation in shorthand (any system).
8. Use typewriter in transcribing from notes or voice recordings.
9. Compose routine correspondence and/or reports.
10. Type routine correspondence and/or reports.
11. Type envelopes, cards, manuscripts, labels, memos, charts, forms and/or stencils.
12. Establish and/or maintain files of correspondence and other records.
13. Merge and/or revise files.
14. Locate and attach related files or other pertinent information to correspondence to be answered by appropriate personnel.
15. Establish procedures and/or perform duplication services.
16. Arrange travel schedule, make travel reservations and prepare travel vouchers for personnel.
17. Compile and type statistical tables and/or statistical reports.
18. Supervise clerical workers.
19. Record and/or type meeting minutes.
20. Schedule appointments for personnel, as appropriate, and/or remind those persons of dates, engagements, and other scheduled activities.

21. Prepare requisitions, select and order supplies, establish acquisition procedures, and distribute incoming materials.

22. Edit correspondence, reports, and manuscripts and check spelling and punctuation for personnel, as appropriate.

Final Job Activity List

Automotive Mechanic

1. Examine (inspect/analyze) vehicle and discuss with customer or automobile-repair-service salesperson or automobile tester, or etc. nature and extent of damage or malfunction.

2. Plan work procedures, using charts, technical manuals, and experience.

3. Raise vehicle, using hydraulic jack or hoist, to gain access to mechanical units bolted to underside of vehicle.

4. Remove unit, such as engine, transmission, or differential, using wrenches and hoist.

5. Disassemble and inspect unit parts for wear using micrometers, calipers, and thickness gauges.

6. Repair or replace parts such as pistons, rods, gears, valves, and bearings using mechanics handtools.

7. Overhaul blowers, generators, distributors, and starters.

8. Repair and/or replace blowers, generators, distributors, starters and other electrical system components.

9. Replace or rebuild parts such as crankshaft and cylinder blocks, using lathes, shapers, drill presses, and/or welding equipment.

10. Rewire ignition systems.

11. Replace or repair lighting system components such as head, tail, and interior lights.

12. Rewire or replace instrument panel components such as speedometer and windshield wiper switch.

13. Reline, adjust, or replace parts within the braking system such as drums, shoes, and/or master cylinder.

14. Inspect and align front and/or rear ends and/or adjust or replace parts such as torsion and trunion bars, ball joints, bearings and steering damper.

15. Inspect, repair and/or lubricate front and/or rear suspension systems and repair or replace parts, such as ball joints, shock absorbers, front wheel bearings grease seal, and front suspension control arms and bushings.

16. Inspect, repair, and/or replace parts in the cooling system and/or air conditioner system.

17. Install and/or replace accessories such as radios, mirrors, and windshield wipers.

18. Repair and/or replace parts in the fuel system such as pumps, manifold, and carburetor.
19. Maintain, adjust, and/or repair standard and power steering units.
20. Remove, repair, replace,and/or balance tires.
21. Replace parts, such as oil pumps, flywheel, gaskets and seals, camshaft, and engine mounts.
22. Inspect, repair or replace exhaust system components.

Final Job Activity List

Business Data Programmer

1. Analyze all or part of workflow chart or diagram representing business problem(s) by applying knowledge of computer capabilities, subject matter, algebra, and symbolic logic to develop a sequence of program steps.

2. Confer with supervisor and other appropriate personnel affected by program to resolve questions of program intent, output requirements, input data for ordering goods and services, extent of automatic programming and coding use and modification, and inclusion of internal checks and controls.

3. Write detailed logical flow chart in symbolic form to represent work order of data to be processed by computer system, and to describe input, output, and arithmetic and logical operations involved.

4. Convert detailed logical flow chart to language processable by computer.

5. Devise sample input data to provide test of program adequacy.

6. Prepare block diagrams to specify equipment arrangements.

7. Observe or run tests of coded program on computer, using actual or sample data.

8. Correct program errors by such methods as altering program steps and sequence.

9. Prepare written instructions (run book) to guide operating personnel during production runs.

10. Select appropriate utility programs.

11. Write programs for local one-time use.

12. Write programs for one make and type of computer.

13. Examine, analyze, review, and rewrite programs to increase operating efficiency or adapt to new requirements.

14. Prepare and analyze documentation including formats and layouts for input and output media.

15. Read and interpret regulations, manuals, or administrative orders.

16. Desk check or debug programs after assembly of compilation.

17. Design report formats.

18. Code routine computer programs.

19. Insert standard changes into existing programs.

20. Code programs using more than one language and determine most applicable program language for problems.

21. Supervise data services functions and automatic data processing equipment operations including analyzing, planning, and monitoring company operations and evaluating processing procedures and data.

APPENDIX I

JOB ACTIVITY-BY-OCCUPATION INSTRUMENT FOR THE THREE OCCUPATIONS

OCCUPATION: General Secretary

RATING SCALE

In relation to this occupation the worker's ability to perform the job activity is

0 Not important
1 Of little importance
2
3
4 Important
5
6
7 Very important

JOB ACTIVITIES (Aggregated Tasks)	RATING
1. Carry out written or oral instructions given by employer or supervisor.	0 1 2 3 4 5 6 7
2. Plan work for one's self and arrange/organize the work environment.	0 1 2 3 4 5 6 7
3. Obtain, open and/or read, and route incoming mail.	0 1 2 3 4 5 6 7
4. Prepare correspondence and/or packages for mailing, including addressing and packaging.	0 1 2 3 4 5 6 7
5. Answer telephone, give information to caller, screen calls for personnel, route calls to appropriate personnel, place outgoing calls, and maintain records of long distance calls.	0 1 2 3 4 5 6 7
6. Greet visitors, ascertain nature of business, and/or refer visitors to appropriate personnel.	0 1 2 3 4 5 6 7
7. Take dictation in shorthand (any system).	0 1 2 3 4 5 6 7
8. Use typewriter in transcribing from notes or voice recordings.	0 1 2 3 4 5 6 7
9. Compose routine correspondence and/or reports.	0 1 2 3 4 5 6 7
10. Type routine correspondence and/or reports.	0 1 2 3 4 5 6 7
11. Type envelopes, cards, manuscripts, labels, memos, charts, forms, and/or stencils.	0 1 2 3 4 5 6 7

OCCUPATION: General Secretary

RATING SCALE

In relation to this occupation the worker's ability to perform the job activity is

0 Not important
1 Of little importance
2
3
4 Important
5
6
7 Very important

JOB ACTIVITIES (Aggregated Tasks)	RATING
12. Establish and/or maintain files of correspondence and other records.	0 1 2 3 4 5 6 7
13. Merge and/or revise files.	0 1 2 3 4 5 6 7
14. Locate and attach related files or other pertinent information to correspondence to be answered by appropriate personnel.	0 1 2 3 4 5 6 7
15. Establish procedures and/or perform duplication services.	0 1 2 3 4 5 6 7
16. Arrange travel schedule, make travel reservations and prepare travel vouchers for personnel.	0 1 2 3 4 5 6 7
17. Compile and type statistical tables and/or statistical reports.	0 1 2 3 4 5 6 7
18. Supervise clerical workers.	0 1 2 3 4 5 6 7
19. Record and/or type meeting minutes.	0 1 2 3 4 5 6 7
20. Schedule appointments for personnel as appropriate and/or remind those persons of dates, engagements, and other scheduled activities.	0 1 2 3 4 5 6 7
21. Prepare requisitions, select and order supplies, establish acquisition procedures, and distribute incoming materials.	0 1 2 3 4 5 6 7
22. Edit correspondence, reports, and manuscripts and check spelling and punctuation for personnel, as appropriate.	0 1 2 3 4 5 6 7

OCCUPATION: Automotive Mechanic

RATING SCALE

In relation to this occupation the worker's ability to perform the job activity is

0 Not important
1 Of little importance
2
3
4 Important
5
6
7 Very important

JOB ACTIVITIES (Aggregated Tasks)	RATING
1. Examine (inspect/analyze) vehicle and discuss with customer or automobile-repair-service salesperson or automobile tester, or etc. nature and extent of damage or malfunction.	0 1 2 3 4 5 6 7
2. Plan work procedures, using charts, technical manuals, and experience.	0 1 2 3 4 5 6 7
3. Raise vehicle, using hydraulic jack or hoist, to gain access to mechanical units bolted to underside of vehicle.	0 1 2 3 4 5 6 7
4. Remove unit, such as engine, transmission, or differential, using wrenches and hoist.	0 1 2 3 4 5 6 7
5. Disassemble and inspect unit parts for wear using micrometers, calipers, and thickness gauges.	0 1 2 3 4 5 6 7
6. Repair or replace parts such as pistons, rods, gears, valves, and bearings using mechanic's handtools.	0 1 2 3 4 5 6 7
7. Overhaul blowers, generators, distributors, and starters.	0 1 2 3 4 5 6 7
8. Repair and/or replace blowers, generators, distributors, starters, and other electrical system components.	0 1 2 3 4 5 6 7
9. Rewire ignition system.	0 1 2 3 4 5 6 7
10. Replace or repair lighting system components such as head, tail, and interior lights.	0 1 2 3 4 5 6 7

OCCUPATION: Automotive Mechanic

RATING SCALE

In relation to this occupation the worker's ability to perform the job activity is

0 Not important
1 Of little importance
2
3
4 Important
5
6
7 Very important

JOB ACTIVITIES (Aggregated Tasks)	RATING
11. Rewire or replace instrument panel components such as speedometer and windshield wiper switch.	0 1 2 3 4 5 6 7
12. Reline, adjust, or replace parts within the braking system such as drums, shoes, and/or master cylinder.	0 1 2 3 4 5 6 7
13. Inspect and align front and/or rear ends and/or adjust or replace parts such as torsion and trunion bars, ball joints, bearings, and steering damper.	0 1 2 3 4 5 6 7
14. Inspect, repair and/or lubricate front and/or rear suspension systems and repair or replace parts, such as ball joints, shock absorbers, front wheel bearings grease seal, and front suspension control arms and bushings.	0 1 2 3 4 5 6 7
15. Inspect, repair, and/or replace parts in the cooling system and/or air conditioner system.	0 1 2 3 4 5 6 7
16. Install and/or replace accessories such as radios, mirrors, and windshield wipers.	0 1 2 3 4 5 6 7
17. Repair and/or replace parts in the fuel system such as pumps, manifold, and carburetor.	0 1 2 3 4 5 6 7
18. Maintain, adjust and/or repair standard and power steering units.	0 1 2 3 4 5 6 7

OCCUPATION: Automotive
Mechanic

RATING SCALE

In relation to this occupation the worker's ability to perform the job activity is

0 Not important
1 Of little importance
2
3
4 Important
5
6
7 Very important

JOB ACTIVITIES (Aggregated Tasks)	RATING
19. Remove, repair, replace, and/or balance tires.	0 1 2 3 4 5 6 7
20. Replace parts, such as oil pumps, flywheel, gaskets and seals, camshaft, and engine mounts.	0 1 2 3 4 5 6 7
21. Inspect, repair, or replace exhaust system components.	0 1 2 3 4 5 6 7

OCCUPATION: Business Data Programmer

RATING SCALE

In relation to this occupation the worker's ability to perform the job-activity is

0 Not important
1 Of little importance
2
3
4 Important
5
6
7 Very important

JOB ACTIVITIES (Aggregated Tasks)	RATING
1. Analyze all or part of workflow chart or diagram representing business problem(s) by applying knowledge such as that of computer capabilities, subject matter, algebra, and symbolic logic to develop a sequence of program steps.	0 1 2 3 4 5 6 7
2. Confer with supervisor and other appropriate personnel affected by program to resolve questions such as those of program intent, output requirements, input data for acquisition, extent of automatic programing and coding use and modification, and inclusion of internal checks and controls.	0 1 2 3 4 5 6 7
3. Write detailed logical flow chart in symbolic form to represent work order of data to be processed by computer system, and to describe input, output, and arithmetic and logical operations involved.	0 1 2 3 4 5 6 7
4. Convert detailed logical flow chart to language processable by computer	0 1 2 3 4 5 6 7
5. Devise sample input data to provide test of program adequacy.	0 1 2 3 4 5 6 7

OCCUPATION: **Business-Data Programmer**

RATING SCALE

In relation to this occupation the worker's ability to perform the job-activity is

0 Not important
1 Of little importance
2
3
4 Important
5
6
7 Very important

JOB ACTIVITIES (Aggregated Tasks)	RATING
6. Observe or run test of coded program on computer, using actual or sample input data.	0 1 2 3 4 5 6 7
7. Correct program errors by such methods as altering program steps and sequence.	0 1 2 3 4 5 6 7
8. Prepare written instructions (run book) to guide operating personnel during production runs.	0 1 2 3 4 5 6 7
9. Select appropriate utility programs.	0 1 2 3 4 5 6 7
10. Write programs for local one-time use.	0 1 2 3 4 5 6 7
11. Write programs for one make and type of computer.	0 1 2 3 4 5 6 7
12. Examine, analyze, review, and rewrite programs to increase operating efficiency or adapt to new requirements.	0 1 2 3 4 5 6 7
13. Prepare and analyze documentation including formats and layouts for input and output media.	0 1 2 3 4 5 6 7

OCCUPATION: Business-Data Programmer

RATING SCALE

In relation to this occupation the worker's ability to perform the job-acitivity is

0 Not important
1 Of little importance
2
3
4 Important
5
6
7 Very important

JOB ACTIVITIES (Aggregated Tasks)	RATING
14. Read and interpret regulations, manuals, or administrative orders.	0 1 2 3 4 5 6 7
15. Desk check or debug programs after assembly of compilation.	0 1 2 3 4 5 6 7
16. Design report formats.	0 1 2 3 4 5 6 7
17. Code routine computer programs.	0 1 2 3 4 5 6 7
18. Insert standard changes into existing programs.	0 1 2 3 4 5 6 7
19. Code programs using more than one language and determine most applicable program language for problems.	0 1 2 3 4 5 6 7
20. Supervise data services functions and automatic data processing equipment operations including analyzing, planning, and monitoring company operations and evaluating processing procedures and data.	0 1 2 3 4 5 6 7

APPENDIX J

DEFINITIONS OF HUMAN ATTRIBUTE REQUIREMENTS OF JOBS

DEFINITIONS*

HUMAN ATTRIBUTE REQUIREMENTS OF JOBS

Prepared for Use
in Data Collection for
Project Grant No. G007603970 "Relating the Capabilities of the Handicapped to the Human Attribute Requirements of Jobs"
under Development at
The Center for Vocational Education
The Ohio State University
Columbus, Ohio

February, 1977

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*Taken from Attribute Requirement Inventory by Robert W. Neeb, J.W. Cunningham, and Thomas C. Tuttle, Center for Occupational Education, North Carolina State University at Raleigh, August, 1970, in cooperation with the United States Office of Education. **Edited for sex stereotyping**.

TABLE OF CONTENTS

A. General Vocational Capabilities 1

B. Cognitive Abilities 3

C. Psychomotor Abilities 6

D. Sensory Capacities 7

E. Interests 7

F. Needs 11

A. GENERAL VOCATIONAL CAPABILITIES

Knowledges and skills which are relevant to a wide variety of occupations but which are more occupationally specific than basic aptitudes and academic abilities. General vocational capabilities can be thought of as falling on a hardware-to-people continuum divided into the following categories: Mechanical; Electrical; Spatial (including structures and layout and visualization); Chemical-Biological; Symbolic (including numerical operations and verbal communication); and People.

1. Tools: Knowledge and skill in the use of common hand tools, portable power tools and equipment (electrical, gasoline, pneumatic, etc.), and selected special tools including delicate precision tools. Examples of job activities requiring a substantial amount of tool skill and knowledge are: a jeweler cutting a gem; a mechanical assembler using an air screwdriver to emplace screws; a carpenter planing a board for a cabinet; an auto mechanic using wrenches to change sparkplugs; etc.

2. Mechanical Systems: A knowledge of elementary mechanical and physical principles and mechanical components, and skill in applying these to tasks. Included are: the principles of pulleys, screws, and inclined planes; common physical forces; gears and linkages; drive mechanisms; transmission of force and energy; leverage; vibration; friction; hydraulics applied to machines; aerodynamic principles applied to machines; etc. Examples of job activities requiring a substantial amount of mechanical knowledge and skill are: an aircraft mechanic troubleshooting an engine failure; a mechanical engineer installing a pneumatic system; a technician working on a prototype machine; a mechanics physicist researching a new type of rocket control system; etc.

3. Stationary Machine and Equipment Operation: Knowledge and skill in operating stationary equipment such as drill presses, lathes, book binding machines, meat slicers, milling machines, etc. Also includes a knowledge of the principles and safety procedures necessary for such operation. Examples of job activities requiring a substantial amount of this capability are: a lathe operator shaping a chair leg; a shoe repairer grinding down a new sole on a shoe; a punch press operator punching holes in sheet metal; a milling machine operator cutting gear teeth; etc.

4. Vehicular Operation: Knowledge and skill in operating vehicles effectively, including a knowledge of vehicular motion, maintenance, and safety. Besides vehicles such as trucks and cars, mechanized equipment such as bulldozers, road scrapers, steam rollers, cranes, etc., would be included. Examples of job activities requiring a substantial amount of this capability are: a bus driver on his/her route; a farmer combining wheat; a highway maintenance worker plowing snow off the roads; a crane operator hoisting building materials for a new skyscraper; etc.

5. Connections and Fittings: Knowledge and skill in the use of threads, flanges, solder joints, welds, packing, washers, etc. Examples of job activities requiring a substantial amount of knowledge and skill in the use of connections and fittings are: a solderer soldering a wire to a switch; a plumber installing a sink; a wirer wiring an electric appliance; a welder welding two beams together; etc.

6. Fluid Systems: An understanding of leak detection measures; solid, liquid, and gas transforms; pressure; valves; safety devices; and thermostats. Examples of job activities requiring a substantial knowledge of fluid systems are: a gas-leak locator checking for gas main leaks; a pressure supervisor keeping the pressure in a boiler adjusted; an air conditioning repairer testing for freon leaks; etc.

7. Measuring Instruments: Competence in using measuring instruments including a knowledge of units of measurement and conversion of units, tolerances, and principles of measurement and estimation. Such competence would be demonstrated through the use of a voltmeter to check the voltage in a machine; a caliper to size a hole; a dial gauge to check the roundness of a piece of aluminum tubing; a pressure gauge to check the air pressure in a tire; a counting scale to count screws; a transit to survey land; a tape measure to measure the dimensions of a room; etc. Examples of job activities requiring a substantial knowledge of measuring instruments are: a surveyor laying out a plot of land; a meteorologist checking temperature and barometric pressure; a quality inspector checking screw sizes with a micrometer; a quality inspector checking rubber hardness with a durometer; etc.

8. Electricity: Knowledge of the principles and concepts of electricity, electromechanics, or electronics. Includes knowledge of such things as electrical components; elementary circuits; common electro-mechanical devices and their functions; electro-mechanical circuits; electrical tests; electrical symbols; and safety. Examples of job activities requiring a substantial amount of electrical knowledge and skill are: an electrician wiring a house; a repairer fixing an electronic computer; a television repairer fixing a TV set; an electronics physicist developing a new transistor; etc.

9. Layout and Visualization: Knowledge and skill in doing layouts and drawings including the use of drawing tools, scaling and measuring instruments, labels and dimensions, and basic geometric principles. Includes the ability to take

objects, photographs, and drawings and use them in preparing a new drawing or layout. Also important is the ability to visualize the spatial relationships among objects and parts. Examples of job activities requiring a substantial amount of layout and visualization are: a drafter drawing a new machine part; a landscaper drawing up a landscape layout; an architect designing a new house; etc.

10. Structures: Knowledge of the accepted standards of structural design including such principles as maximum strength, use of building materials and insulation, maximum weather protection, and removal of damaged structures. Also, the application of basic geometric concepts and elementary drawing techniques to problems of simple structural design and representation; determining relative size of interior and exterior surfaces; and knowledge of forming techniques. Examples of job activities requiring a substantial knowledge of structures are: a carpenter installing a new kitchen; an architect writing specifications for a house; a construction engineer drawing up the details of a new building and writing material and construction specifications; etc.

11. Materials: Knowledge of the characteristics, properties, and uses of common materials. Includes a knowledge of surfaces and their covering (such as wood finishing, floor coverings, etc.), easily damaged materials, strength and pliability of materials, consistency of material, weight and density of material, durability of material, etc. Examples of job activities requiring a substantial amount of knowledge and skill in the use of materials are: a civil engineer writing material requirements for a new bridge; a carpenter deciding what materials to use to finish a new cabinet; a head paint inspector determining what paint to use to cover up a discolored typewriter; etc.

12. Chemicals: Knowledge of common chemicals, chemical components, and their reactions and effects. Would include an understanding of combustion, its products and effects; common laboratory and industrial procedures; chemical cleaners and other chemical agents; etc. Examples of job activities requiring a substantial amount of knowledge in the use of chemicals are: a soil analyst testing soil composition; a chemist carrying out an experiment; a pharmacist preparing a prescription; a textile technician chemically testing cloth to see that it meets specifications; etc.

13. Foods and Cooking: Knowledge and understanding of common foods, their preparation and composition; basic food chemistry; diets; and food sanitation. Also, the ability to schedule cooking operations. Examples of job activities requiring a substantial knowledge of foods and cooking are: a dietician preparing a school menu; a chef supervising the preparation of a meal; a baker baking a cake; etc.

14. Biological Systems: Knowledge of anatomy, physiology, and the functioning of life systems. Would include skill in performing and interpreting common biological and medical laboratory tests; also, knowledge of biological reactions to common substances and chemicals. Examples of job activities requiring a substantial amount of this capability are: a physician interpreting X-rays; a physiologist studying cardiovascular responses in dogs; a medical technologist testing a blood sample; a biologist studying life processes in an amoeba; etc.

15. Medical and First Aid: Knowledge of medical and first aid practices and techniques and skill in using this knowledge in treating patients. Examples of job activities requiring a substantial amount of medical and first aid skills are: a doctor performing an emergency operation; a rescue squad worker administering oxygen; a veterinarian examining a horse with a broken ankle; a nurse giving a tetanus shot; etc.

16. Arithmetic Computation: Skill in carrying out basic arithmetic operations (+, -, ÷, x) and in applying these to practical problems. Would also include the use of fractions, decimals, percentages, and proportions; computing and bisecting angles; computing lengths using geometric relationships; using exponents; etc. Examples of job activities requiring a substantial amount of this capability are: a drafter computing scale drawing dimensions; a machinist converting micrometer readings to fractions; an interior decorator figuring material requirements for a new house; a mathematician computing the answer to a problem; etc.

17. Arithmetic Conventions: Skill in using arithmetic and bookkeeping conventions including graphs, tables, charts, ledgers, etc. Also, the application of special purpose symbol systems (such as computer language; debit, credit, and asterisk symbols; etc.) to work situations. Examples of job activities requiring a substantial amount of skill in using arithmetic conventions are: a market analyst preparing tables and charts; an accountant preparing a financial statement; an actuary preparing insurance premium tables; a bookkeeper keeping a ledger; a computer programmer writing a program; etc.

18. Clerical: Knowledge of office routines, letter format, copying, filing procedures, and basic office machine operation (for example, typewriters, adding machines, postage meters), etc. Also, skill in taking notes from oral instruction including

understanding and following instructions. Examples of job activities requiring a substantial amount of clerical capability include: a stenographer taking dictation; a typist typing a letter; an office worker filing letters; a secretary proofreading a report; a bank teller entering a deposit; etc.

19. Verbal Communication: Skill in oral and written expression and comprehension Including the ability to give effective instructions; write letters and prepare reports; defend opinions; read rapidly with high retention; understand lectures and briefings; speak effectively; etc. Would include knowledge of grammar; punctuation and format; content selection; vocabulary sentence variety and clarity; correct diction; etc. Examples of job activities requiring a substantial amount of verbal communication skills are: a professor giving a lecture; a writer writing a novel; an executive giving a briefing; an advertising sales representative discussing the placement of a magazine ad with new customers; etc.

20. Sales: Skill in assessing customer's needs and then matching customer, product, and sales technique. Includes appropriate use of persuasion and sales procedures, knowledge of customer problems, and the ability to handle merchandising and advertising. Examples of job activities requiring a substantial amount of sales knowledge and skill are: a real estate agent trying to sell a house; a technical sales associate selling a copying machine; an advertising manager preparing a magazine ad; etc.

21. Service: Knowledge of your customer's or client's rights and needs and the rules and procedures of effective service, including the ability to use this knowledge to your client's advantage and satisfaction. Examples of job activities requiring a substantial amount of this capability are: a travel agent helping to plan a trip; a headwaiter/headwaitress overseeing the operation of a restaurant; an airline steward/stewardess serving passengers; etc.

22. Dealing with Social Situations: Skill in perceiving social situations correctly and reacting appropriately. This would include skill in dealing with non-routine, awkward, or unusual social situations when they arise. Also includes skill in interpreting gestures, actions, etc. Examples of job activities requiring a substantial amount of skill in dealing with social situations are: a school teacher handling an unruly class; a social worker aiding a poor family; a minister giving advice; an airline pilot trying to reassure passengers on a hijacked airplane; a supervisor handling an employee grievance; etc.

23. Etiquette and Social Grace: Knowledge of the social behavior, manners, and ceremonies established by convention as acceptable in society or in a profession, and the ability to follow these rules. Also, skill in conducting oneself with grace and bearing. Examples of job activities requiring a substantial amount of etiquette and social grace are: a chief servant serving important guests; a maitre d' carrying out his/her duties; a ballroom dance teacher giving lessons; a company executive entertaining out-of-town customers; etc.

24. Style and Grooming: Knowledge and skill in proper attire and grooming. Includes skill in enhancing one's own appearance, as well as the appearance of others. Examples of job activities requiring a substantial amount of knowledge and skill in style and grooming are: a model showing clothes; a beautician styling a customer's hair; a barber giving a haircut; a fashion designer designing new clothes; etc.

B. COGNITIVE ABILITIES

General and relatively stable intellectual capacities involving perceiving, recognizing, remembering, conceiving, reasoning, creative thinking, judging, etc. Cognitive abilities are prerequisite to performance on a wide variety of specific tasks. A distinguishing characteristic of cognitive abilities--in comparison to psychomotor abilities and affective states (such as needs and interests)--is a relatively high state of consciousness or awareness of one's behavior.

25. Closure: The ability to organize a disorganized or ambiguous visual field into a single percept or impression, with or without knowledge of any of the specific configurations contained in the field. Examples of job activities requiring a substantial amount of closure are: an aerial-photograph interpreter examining a photograph for camouflaged military installations; a technician examining cell patterns under a microscope; an astronomer interpreting celestial phenomena; etc.

26. Form Perception: The ability to perceive pertinent detail in objects or in pictorial or graphic material; to make fine visual comparisons and discriminations among characteristics such as shapes and shadings of figures or objects and widths and lengths of lines. Examples of job activities requiring a substantial amount of form perception are: a fingerprint classifier comparing fingerprints; a hand decorator painting designs on pottery; a topographical drafter distinguishing terrain features on maps; etc.

27. Perceptual Speed: The ability to rapidly perceive pertinent detail in verbal or tabular material and to rapidly perform simple visual discrimination tasks. This would include such tasks as proofreading, making comparisons of written material, discriminating between symbols, detecting differences in copy, etc. Examples of job activities requiring a substantial amount of perceptual speed are: a proofreader checking a proof against the original copy; a stenographer typing a letter from shorthand notes; a bookkeeping-machine operator transposing information from sales slips or invoices to the machine; etc.

28. Spatial Scanning: Speed in visually exploring a wide or complicated field with the objective of identifying or detecting objects. Examples of job activities requiring a substantial amount of spatial scanning are: a radar operator looking for unidentified objects on a radar screen; a forest ranger spotting forest fires; an insurance underwriter looking for an insurance premium in an actuarial table; etc.

29. Spatial Orientation: The ability to perceive spatial patterns and to orient oneself in relation to the position and configuration of surrounding objects. Examples of job activities requiring a substantial amount of spatial orientation are: a single engine airplane pilot making a landing; a motor launch operator conducting a tour of a lake; a mountain climber climbing a mountain; etc.

30. Visualization: The ability to comprehend spatial patterns in two or three dimensions and to mentally manipulate or transform them into other spatial patterns; the ability to visualize objects of two or three dimensions; to think visually of geometric forms. (For example, to see a three-dimensional drawing of a square with various sides shaded and to be able to visualize how that square would look if it were opened up and laid out flat.) Visualization differs from spatial orientation in that in visualization the observer is removed from the spatial pattern, whereas in spatial orientation the observer is the center of the pattern. Examples of job activities requiring a substantial amount of visualization are: a dentist using a mirror to fill a tooth; an architect sketching a proposed building; an artist painting a landscape; etc.

31. Number Facility: The ability to manipulate numbers in arithmetical operations (especially addition, subtraction, multiplication, and division) rapidly and accurately. Number facility also includes counting, plotting on numbered coordinates, etc. Examples of job activities requiring a substantial amount of number facility are: an insurance underwriter computing compound interest and premium rates; a chemist computing the answer to a mathematical equation; a bookkeeper adding or subtracting debits and credits; a drafter computing scale representations of objects; etc.

32. Memory: The ability to mentally store pertinent information and to recall it perfectly for reproduction within a short period of time (one minute to eight hours). Examples of job activities requiring memory are: a telephone operator remembering names of people, companies, telephone numbers, etc.; a taxicab driver remembering dispatch addresses; a student cramming for an exam at the last minute; a politician giving an acceptance speech from memory; etc.

33. Verbal Comprehension: The ability to understand meanings of words and the ideas associated with them, and to use them effectively; the ability to comprehend language, to understand relationships between words, and to understand meanings of whole sentences and paragraphs. Examples of job activities requiring a substantial amount of verbal comprehension are: a case worker preparing a case history; a civil lawyer preparing a case; a newspaper editor writing an editorial; a research engineer reviewing a technical report; etc.

34. Grammar: The ability to deal with forms and structures of words and their customary arrangement in phrases and sentences. Included is the ability to recognize good and bad grammar and to recognize correct punctuation and word usage. Examples of job activities requiring a substantial knowledge of grammar are: an editor checking a manuscript; an advertising manager preparing an ad; an English teacher reading term papers; etc.

35. Spelling: The ability to use letters properly to form words. Spelling also includes the ability to distinguish between correctly spelled and misspelled words. Examples of job activities requiring a substantial knowledge of spelling are: a proofreader checking type script; a secretary checking a letter before it goes out; a stenographer typing a letter from shorthand; a technical writer preparing a report; etc.

36. Expressional Fluency: The ability to rapidly put ideas into words, especially in oral or written connected discourse. Expressional fluency differs from ideational fluency (below) in that expressional fluency does not involve coming up with ideas (as does ideational fluency) but, rather, the verbal expression of these ideas. Examples of job activities requiring a substantial amount of expressional fluency are: a lawyer questioning a witness; a politician in a nationally televised debate; a newspaper reporter writing an article; etc.

37. Ideational Fluency: The ability to rapidly produce ideas about a given topic where quantity rather than quality of ideas is stressed (for example, producing as many ideas as possible about a given topic in five minutes). Examples of job activities requiring a substantial amount of ideational fluency are: a marketing manager throwing out ideas about naming a new product; an advertising agent giving suggestions for a new mailer; an automotive engineer suggesting style changes for next year's cars; etc.

38. Sensitivity to Problems: The ability to recognize practical problems (for example, improvements that could be made in electrical appliances, etc.); deficiencies in courses of action or organizational plans (for example, why a road should not be repaved when it would have to be torn up in the near future to install new sewer pipes); or implications of activities (for example, if the activity is building a dog house, the ability to infer that the entrance must be large enough to accommodate the dog, that the roof should be slanted so that rain will run off, that the entrance should be pointed away from the normal direction of the wind, etc.). Examples of job activities requiring a substantial amount of sensitivity to problems are: an industrial consultant investigating decreasing production in a company; a civil engineer evaluating a plan to build a new super highway; a building contractor planning the construction of a new house; a high school teacher trying to anticipate the problems that could arise on a planned class trip and also, what measures to take if such problems do arise; etc.

39. Deductive Reasoning: The ability to take given premises and reason to their necessary conclusion. For example, given: "All holidays are paid and no Sundays are paid," the ability to deduce that "No Sundays are holidays." Examples of job activities requiring a substantial amount of deductive reasoning are: a district attorney prosecuting a case; an electronic trouble-shooter trying to solve a novel computer problem; a mathematician solving a problem; etc.

40. Inductive Reasoning: The ability to take specific sets of information and to generate or conceive of general concepts which give structure and meaning to the information; that is, finding a general concept, principle, rule, or hypothesis to explain a set of specific instances. This factor is tested for by requiring the examinee to derive a principle from a number of particular instances. (For example, given the nonsense syllables ABC, MNO, XYZ, PQS, GHI, the ability to discover that PQS is different from the others, since the rule for the formation of the others is alphabetical order.) Includes the ability to discern basic differences and relationships among symbols, figures, and figure patterns (usually measured through the use of figure diagrams arranged in accordance with underlying principles). Examples of job activities requiring a substantial amount of inductive reasoning are: a physicist developing a theory to explain a series of laboratory findings; a cryptanalyst decoding a secret message; a bio-chemist breaking down DNA codes; a social psychologist formulating a theory to explain voting behavior; etc.

41. Originality: The ability to produce responses or ideas which are either clever or uncommon. For example, the ability to produce clever titles to story plots or to produce novel consequences of a hypothetical situation (such as what if everyone went blind). Examples of job activities requiring a substantial amount of originality are: an advertising manager producing a new twist for an ad; a marketing manager thinking of an unusual name for a new product; a cartoonist drawing a satirical cartoon; etc.

42. Social Intelligence: The ability to correctly process behavioral information obtained through social interaction. Includes an awareness of, or sensitivity to, the behavioral indicators of attention, thoughts, desires, moods, emotions, intentions, etc. Such behavioral indicators include gestures, postures, actions, expressions, voice inflections, etc. Examples of job activities requiring a substantial amount of social intelligence are: a politician campaigning for office; a shop head supervising his/her subordinates; a nurse working with elderly patients in a nursing home; a salesperson varying his/her sales approach according to customer reaction; etc.

43. Aesthetic Judgment: The ability to make judgments concerning the compositional organization of art objects on the basis of variations in unity, proportion, form, color, and design. Examples of job activities requiring aesthetic judgment include: an art teacher criticizing students' work; an art appraiser determining the value of a painting; an artist painting a picture; a sculptor carving a design in stone; an architect judging the aesthetic quality of a design; etc.

44. Musical Aptitude: Musical aptitude consists of a combination of sensory, psychomotor, and cognitive capabilities which have been found to underlie success in music. These capacities include sense of pitch, rhythm, time, and tonal memory. Job activities requiring musical aptitude are: playing a musical instrument; singing; directing an orchestra; judging a music contest; etc.

C. PSYCHOMOTOR ABILITIES

Capacities involving bodily or muscular movement, usually in coordination with the sensory processes.

45. Control Precision: The ability to make rapid, yet precise, highly controlled muscular movements to adjust the position of a control mechanism (such as joysticks, levers, pedals, rudders, etc.). The adjustments are made through the use of either the arm and hand or leg and foot. Many adjustments may be required, with the number and magnitude determined through feedback of the effectiveness of previous adjustments. Examples of job activities requiring a substantial amount of control precision are: an airline pilot operating a joystick to steer an aircraft; a lathe operator manipulating the die, through the use of a lever, to shape a chair leg; a crane operator positioning a building section; etc.

46. Multilimb Coordination: The ability to use more than one limb (both hands, both feet, or hands and feet) simultaneously, in a coordinated manner. Examples of job activities requiring a substantial amount of multilimb coordination are: manually changing gears on an automobile using the shift and clutch; playing baseball; playing a piano; etc.

47. Reaction Time: The ability to respond rapidly to a stimulus when it appears. Examples of job activities requiring a substantial amount of reaction time are: using the brakes of an automobile so as not to hit a child; stopping an electronic card sorter when a card jams; reacting to the starting gun at a track or swim meet; etc.

48. Eye-Hand Coordination: The ability to make rapid and accurate hand movements in coordination with visual stimuli. This ability is tested for by requiring the examinee to place dots in small circles as rapidly as possible. Examples of job activities requiring a substantial amount of eye-hand coordination are: a switchboard operator connecting a call by placing the correct wire in the correct hole; a bricklayer laying bricks; a mechanical assembler soldering wires together; etc.

49. Manual Dexterity: The ability to make rapid and accurate arm-hand movements in manipulating fairly large objects. Examples of job activities requiring a substantial amount of manual dexterity are: a mechanic tuning a car; a sewing machine operator making a dress; a gift wrapper wrapping gifts in a clothing store; etc.

50. Finger Dexterity: The ability to make precise manipulations of small objects with the fingers. Examples of job activities requiring a substantial amount of finger dexterity are: a surgeon performing a critical operation; a watchmaker assembling a watch; an engraver cutting designs in jewelry; a repairer rewiring an appliance; etc.

51. Arm-Hand Steadiness: The ability to make precise arm-hand positioning movements and to maintain steadiness while making these movements, where strength and speed are unimportant. Also, the ability to minimize movement while the arms and hands are in a set position. Examples of job activities requiring a substantial amount of arm-hand steadiness are: an artist painting a picture; a police officer firing a pistol; a chemist transferring liquids from one test tube to another; a make-up artist lining an actor's face; etc.

52. Explosive Strength: The ability to apply a maximum amount of force through one or more short bursts of effort. Examples of job activities requiring a substantial amount of explosive strength are: a construction worker driving a metal stake into the ground; a carpenter sawing a piece of wood; a sailor throwing a line to shore; etc.

53. Static Strength: The ability to exert considerable force against external objects for a brief period, as in lifting, pushing, pulling, squeezing, carrying, etc. It applies to different muscle groups (hand, arm, back, shoulder, leg) and to different kinds of tasks. Examples of job activities requiring a substantial amount of static strength are: a mover moving furniture; a laborer loading 100 pound sacks of concrete on a truck; a weightlifter lifting weights; a dockhand unloading boats; a construction worker using bolt cutters to cut up heavy metal rods; etc.

54. Dynamic Strength: The ability to exert force repeatedly or continuously over time so as to move or support the body. Muscular endurance and resistance to muscular fatigue are important in this ability. Examples of job activities requiring a substantial amount of dynamic strength are: a ballet dancer performing; a gymnast performing on the horizontal bar; an assembler using a screwdriver constantly to emplace screws; etc.

55. Body Equilibrium: The ability to maintain or regain body balance and orientation when equilibrium is threatened or temporarily lost, placing primary reliance on nonvisual cues (for example, kinesthetic and vestibular cues). Examples of job activities requiring a substantial amount of body equilibrium are: painting from a ladder; walking on a steel beam; climbing a telephone pole to do repair work; installing an antenna on an A-frame house; etc.

56. **Stamina:** The ability to exert the body through continuous effort over an extended period of time (cardiovascular endurance). Examples of job activities requiring a substantial amount of stamina are: fighting a fire; digging irrigation ditches; running cross country; etc.

D. SENSORY CAPACITIES

Capabilities involving use of sense organs.

57. **Near Visual Acuity:** The ability to visually discriminate detail at normal reading distance or less. Examples of job activities requiring a substantial amount of near visual acuity are: a jeweler cutting a gem; a handcarver carving small figurines; an editor proofreading an editorial; etc.

58. **Far Visual Acuity:** The ability to perceive detail at distances beyond normal reading distance. Examples of job activities requiring a substantial amount of far visual acuity are: a forest ranger spotting forest fires; a store detective watching for shoplifters; a crane operator moving building materials; an airplane pilot searching for wreckage of another airplane; a truck driver making deliveries; etc.

59. **Depth Perception:** The ability to perceive distances, such as: from the observer to an object; between objects along the observer's line of vision; from the front to the back of an object so that it is seen three-dimensionally; etc. Examples of job activities requiring a substantial amount of depth perception are: an airplane pilot making a landing; moving objects with a forklift; painting a landscape; etc.

60. **Color Discrimination:** The ability to perceive similarities or differences in colors. Includes the ability to identify a particular color, recognize harmonious or contrasting color combinations, or to match colors adequately. Examples of job activities requiring a substantial amount of color discrimination are: an artist painting a portrait; an interior decorator choosing color schemes; a glazier artist selecting glass for a stained glass window; etc.

61. **Auditory Acuity:** The ability to perceive relevant sound cues and to discriminate between sounds in terms of their intensity, pitch, or tonal quality. Examples of job activities requiring a substantial amount of auditory acuity are: a piano tuner tuning a piano; a general practitioner examining a patient's chest with a stethoscope; a night guard listening for intruders; a telephone operator taking phone numbers; etc.

62. **Tactual Discrimination:** The ability to discriminate characteristics of objects (such as size, shape, texture, etc.) through the use of touch. Examples of job activities requiring a substantial amount of tactual discrimination are: a surgeon performing a heart operation; a sculptor modeling a small plastic statue; a cloth inspector examining cloth by feeling for defective weaving; etc.

E. INTERESTS[1]

Preferences for, attractions toward, or likings of various classes of activities and the contexts associated with these activities. Interests are measured by questions concerning the examinee's reference for or strength of attraction toward such things as job activities, hobbies, recreational pursuits, and leisure activities.

63. **Manual Work:** This interest area involves a preference for the following types of work activities: (1) use of the hands and body and sometimes the use of hand tools to work, move, guide, or place objects and materials; (2) activities which are routine and usually do not require following strict standards or detailed instructions; (3) feeding or off-bearing from automatic machines, or machines operated by other workers; (4) stopping, starting, or watching the operation of machines, setting guides, pushing buttons or making other pre-determined adjustments. Examples of jobs for which this interest is important include: groundskeeper; small parts assembler; conveyor loader; poultry dresser; garment folder; automatic sewing machine operator; parking meter collector; thread winder; machine feeder; etc.

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[1] The interest definitions (Items 63-86) were adapted from Ohio Vocational Interest Survey, copyright 1969 by Harcourt Brace Jovanovich, Inc.

64. Machine Work: Preference for work activities which involve fine work with hands, hand tools, stationary and nonstationary machines as well as activities in which the responsibility for a good job rests with the worker who must exercise good judgment in selecting, using, and caring for tools and machines. Work activities involving stationary machines include: (1) setting up and adjusting the machine; (2) selecting the proper parts and tools; (3) observing and adjusting the operation; (4) making minor repairs; (5) performing other operations including stopping the machine, removing the product, and checking its accuracy using blueprints or specifications. Work activities performed on nonstationary machines include: (1) starting and stopping; (2) steering; (3) operating various controls; (4) occasionally performing at the signal of others. Jobs for which this interest is relevant include: butcher; machine assembler; thermostat repairer; mold setter; labeling machine set-up person; dry cleaner; offset press operator; sewing machine operator; bulldozer operator; conveyor operator; etc.

65. Personal Service: Preference for work activities involving direct contact, communication, or close association with those being served. Types of personal service involved include: (1) modeling; (2) protecting people and property; (3) selling commodities such as newspapers and sundries; (4) serving food; (5)chauffering; (6) delivering messages. Examples of jobs for which this interest is relevant include: model; lifeguard; restaurant host; bartender; doorkeeper; telegraph messenger; etc.

66. Care of People or Animals: Preference for work activities which involve taking care of people or animals. Work activities related to care of people include: (1) taking care of the safety, health, and personal hygiene of children and/or those who are ill; (2) feeding; (3) dressing; (4) bathing; (5) reading to; (6) otherwise maintaining the comfort of the person. Work activities related to the care of animals include: (1) handling and exercising; (2) feeding and watering; (3) training; (4) grooming; (5) treating for minor illness and injury. Examples of jobs for which this interest is relevant include: practical nurse; child-care attendant; orderly; horse exerciser; dog groomer; pet shop attendant; etc.

67. Clerical Work: Preference for work activities which involve general office work. Work activities include: (1) sorting, classifying, recording, and filing records, reports, correspondence; (2) keeping records according to some already established plan or system; (3) typing, taking and transcribing shorthand; (4) operating business machines or calculating machines. Examples of jobs for which this interest is relevant include: music librarian; file clerk; stenographer; bookkeeper; production clerk; medical-record clerk; proofreader; meter reader; typist; key punch operator; etc.

68. Inspecting and Testing: This interest area involves a preference for the following types of work activities: (1) examining materials and supplies and keeping inventory records; (2) using precision measuring instruments such as gauges, calipers, micrometers, or test apparatus for the purpose of grading, sorting, detecting flaws, or checking to make sure that products meet specified standards; (3) performing laboratory or other scientific tests according to standardized procedures. Examples of jobs for which this interest is important include: fire inspector; battery tester; sorter; thermostat adjuster; scientific helper; meat grader; weaving inspector; quality-control technician; etc.

69. Crafts and Precise Operations: Preference for work activities which involve the application of high level manual skills and an organized body of knowledge to one or more of a wide variety of crafts and precision operations. Work activities involving crafts and precise operations interests include: (1) operation of radio, television, and motion picture equipment; (2) precision operation of machine tools; (3) application of skills and knowledge regarding tools and materials to construction, fabricating, and maintenance crafts; (4) set-up, operation, and maintenance of data-processing, type-setting, duplicating, and similar machines; (5) precision operation of diesel, gasoline, steam, or electric powered vehicles or equipment to test their performance, transport cargo, or provide special services. Examples of jobs for which this interest is important include: digital-computer operator; jeweler; carpet layer; plumber; test pilot; motion picture projectionist; radio station operator; auto mechanic; machinist; carpenter; hand engraver; watch assembler; electrician; etc.

70. Customer Services: Preference for work activities which involve providing services to people in a variety of business situations. Knowledge of the product or techniques of service and the ability to deal with people are important. Work activities involving customer services include: (1) receiving money and keeping records of the transactions; (2) transporting passengers or merchandise; (3) collecting, organizing, and dispensing information; (4) operating a telephone switchboard, taking messages and supplying information; (5) demonstrating and selling products to customers; (6) providing other public services. Examples of jobs for which this interest is important include: receptionist; ticket agent; teller; sales attendant; taxi driver; cashier-checker; dispatcher; recreation facility attendant; etc.

71. Nursing and Related Technical Services: Preference for work activities which involve caring for the sick and injured and providing nursing services concerned with the prevention of illness and the promotion of good health. These activities are, in most cases, performed under the supervision of a doctor or other specialist. Work activities involving nursing and related technical services include: (1) the use of X-ray and other medical laboratory equipment for diagnostic or therapeutic purposes; (2) providing physical therapy through exercise; the use of mechanical apparatus; or the application of heat, light, water, or electricity. Examples of jobs for which this interest is important include: office nurse; dental hygienist; X-ray clerk; physical therapist; audiometrist; surgical technician; etc.

72. Skilled Personal Services: This interest area involves a preference for the following types of work activities: (1) providing skilled services such as tailoring or altering clothing to fit the wearer; (2) planning and preparing meals in homes, restaurants, or other eating places; (3) providing services related to the care and physical appearance of people such as barbering, treatment of skin and nails, make-up analysis, and cosmetology. Examples of jobs for which this interest is important include: dressmaker; cook; barber; manicurist; cosmetologist; costumer; etc.

73. Training: Preference for work activities which involve the training of people, or sometimes animals, in a variety of settings and for a variety of purposes. The trainer or instructor must be skilled in the area of work being taught and be able to examine and evaluate the progress of trainees. Work activities involving training include: (1) training individuals in the organization, policy, regulations, procedures, and methods of work in a business or industry; (2) teaching recreational or hobby activities; (3) training animals for show or performance; (4) training guide dogs; (5) providing instruction in such fields as flying, boating, etc. Examples of jobs for which this interest is important include: police academy instructors; flying instructors; camp counselor; dog trainer; YMCA leader; bus driving instructor; training supervisor; etc.

74. Literary: This interest area involves a preference for the following types of work activities which often require a high degree of abstract-verbal ability: (1) preparing correspondence, reports, legal and business documents, or written descriptions of technical operations and processes; (2) doing creative writing and editing; (3) translating from one language to another; (4) conducting and reporting research investigations in the political, social, and psychological sciences. Examples of jobs for which this interest is important include: claim examiner; job analyst; poet; censor; foreign-news translator; historian; editorial writer; law clerk; political scientist; technical writer; etc.

75. Numerical: This interest area involves a preference for the following types of work activities: (1) applying the principles of accounting, cost analysis, and statistical analysis to problems of business management, including (a) advising, accounting, and auditing systems and procedures, (b) evaluating costing methods, and (c) collecting and analyzing business data; (2) investigating such areas as the theoretical aspects of physics and mathematics; atmospheric, astronomical and geographic phenomena and conditions; and automatic data-processing systems and programs, including (a) analyzing data-processing problems, (b) formulating and testing theories, and (c) developing new mathematical and statistical methods. Examples of jobs for which this interest is important include: tax accountant; appraiser; auditor; actuary; business programmer; meteorologist; mathematician; statistician; etc.

76. Appraisal: This interest area involves a preference for the following types of work activities: (1) applying engineering knowledge to the planning, installation, direction, and operation of projects and systems in a specific field of engineering such as civil, mechanical, chemical, electrical, or industrial; (2) carrying out appraising, analytical, or investigating work related to surveying, exploring, mining, construction, merchandising, or materials analysis. Examples of jobs for which this interest is important include: cost-analysis engineer; space analyst; surveyor; gemologist; real estate appraiser; quality-control engineer; mining investigator; weather observer; water purification chemist; sanitary inspector; insurance claims adjuster; building construction inspector; etc.

77. Agriculture: This interest area involves a preference for the following types of work activities: (1) farming; (2) gardening; (3) animal herding; (4) applying the principles of chemistry, physics, biology, and genetics to scientific agriculture so as to advance man's knowledge of agricultural principles. Examples of jobs for which this interest is important include: flower grower; dairy farmer; botanist; zoologist; forester; landscaper; soil conservationist; animal breeder; etc.

78. Applied Technology: Preference for work activities which involve applying engineering and research principles and knowledge to the design of new structures, machines, and tools, and to the development or evaluation of new techniques, processes, and products; working in the translation of ideas, sketches, or specifications into complete and accurate working plans; or applying engineering and related

technical knowledge in such specialized fields as research, design, and development. Examples of jobs for which this interest is important include: architect; civil engineer; mechanical drafter; electronic technician; geologist; mechanical engineer; organic chemist; physicist; electrical engineer; etc.

79. Promotion and Communication: This interest area involves a preference for the following types of work activities: (1) planning, directing, and conducting advertising and public relations programs; (2) writing or editing material designed to influence or inform the public; (3) gathering newsworthy information and writing related articles for publication or presentation via radio or TV; (4) performing legal or related work; (5) conducting investigations and examinations or enforcing laws and regulations; (6) negotiating contracts or promoting the interests of individuals or organizations; (7) performing such executive secretarial tasks as making appointments, handling telephone calls, and performing minor executive duties, in addition to taking and transcribing dictation or initiating correspondence. Examples of jobs for which this interest is important include: lobbyist; business agent; placement officer; legal secretary; disc jockey; patrol officer; judge; columnist; news reporter; booking agent; personnel recruiter; lawyer; public relations worker; journalist; etc.

80. Management and Supervision: Preference for work activities which involve the formulation and administration of management policies and procedures or the supervision, control, and coordination of a wide variety of work activities. Involved are examining methods, procedures, or problems and recommending improvements or solutions. Examples of jobs for which this interest is important include: sales manager; police chief; production supervisor; postmaster; supervisor; school superintendent; library director; hotel manager; air-traffic coordinator; chef; etc.

81. Artistic: Preference for work activities which involve the creative expression of ideas, feelings, and moods. The worker must be talented in his area of specialization. At times, the worker consults with customers or consumers. Work activities involving artistic interests include: (1) producing decorative or artistic effects through clothing design, interior decoration, commercial art, etc.; (2) photographing people, objects, or materials with still or motion picture cameras; (3) creating fine art such as painting and portraiture, sculpture, ceramics, and murals; (4) arranging, decorating, or restoring objects and materials to produce an acceptable artistic effect or product. Examples of jobs for which this interest is important include: set director; commercial photographer; illustrator; artist; interior decorator; camera operator; furniture designer; sculptor; taxidermist; sign writer; etc.

82. Sales Representative: Preference for work activities which involve sale and installation of products or services and may include the servicing of machines or equipment sold. Work activities involving sales interests include: (1) applying a knowledge of engineering and business principles, customer problems, marketing conditions, and product design and function to sales and service work; (2) making appointments; (3) visiting customers; (4) working with customers to solve technical problems; (5) working out comparative cost factors. Examples of jobs for which this interest is important include: sales engineer; buyer; service engineer; insurance salesperson; purchasing agent; manufacturer's field representative; home-service representative; etc.

83. Music: Preference for work activities which involve performing or creating in the field of music. Work activities involving music include: (1) singing or directing others in singing; (2) entertaining audiences by playing musical instruments or conducting orchestras; (3) composing or arranging instrumental or vocal music. Examples of jobs for which this interest is important include: orchestra leader; concert singer; arranger; composer; choral director; etc.

84. Entertainment and Performing Arts: Preference for work activities which involve entertaining others. Work activities involving entertaining and performing include: (1) creating and performing original acts or interpreting stock routines in an original style; (2) performing in a dramatic production before a live audience or television or motion picture cameras; (3) performing in rhythmics and dance, individual or team sports, or exhibitions of unusual or distinctive skills; (4) explaining or presenting some type of entertainment or diversion such as a stage show, contest, or game of chance. Examples of jobs for which this interest is important include: comedian; actor; dancer; athlete; ring master; acrobat; magician; side-show operator; etc.

85. Teaching, Counseling, and Social Work: This interest area involves a preference for the following types of work activities: (1) teaching elementary school; (2) teaching academic or vocational subjects at the high school, college, or graduate level; (3) instructing in the theater, fine arts, or sports and physical development; (4) planning, organizing, and conducting educational programs in a specialized field such as nursing or medical technology; (5) providing guidance counseling and

welfare services to individuals or groups in the solution of occupational, educational, personal, or social problems. Examples of jobs for which this interest is important include: music teacher; caseworker; clergy; home economist; university faculty member; athletic coach; kindergarten teacher; county agricultural agent; psychologist; etc.

86. Medical: Preference for work activities which involve the application of knowledge of medical science to the diagnosis, prevention, and treatment of human or animal diseases, disorders, and injuries. Work activities involving specialized medical applications include: (1) surgery; (2) conducting research and devising programs to protect workers in various settings from health hazards; (3) planning, organizing, and directing or conducting programs designed to aid in the rehabilitation of the physically or mentally ill or handicapped. Examples of jobs for which this interest is important include: oral surgeon; dentist; veterinarian; optometrist; recreational therapist; pediatrician; general practitioner; radiologist; audiologist; etc.

F. NEEDS[2]

Preferences, desires, or felt wants for various classes of outcomes and conditions which, for the respondent, are associated with satisfaction or reward. Needs are usually measured by questions concerning the examinee's preference for or strength of attraction toward specified outcomes or conditions.

87. Ability Utilization: The need to do work that makes full use of one's abilities; work that is challenging in terms of skill, knowledge, or mental ability. (Think in terms of the abilities of the "average person.")

88. Achievement: The need to feel a sense of accomplishment in one's work.

89. Activity: The need to keep busy through physical activity, job-related social contact, or mental activity.

90. Advancement: The need to occupy a position which offers opportunity for promotion or other forms of advancement.

91. Authority: The need to direct or supervise the activities of others.

92. Compensation: The need to feel that one is being well rewarded through pay and benefits in comparison to other persons with equal ability and education.

93. Co-Workers: The need to occupy a position which allows social interaction and the opportunity to establish friendships with one's co-workers.

94. Creativity: The need to apply one's initiative, ingenuity, and creativity to the work situation; to produce new and original products and ideas; to apply one's own ideas..

95. Independence: The need to plan, direct, and carry out one's own activities rather than be directed by others.

96. Moral Values: The need to avoid a work situation which conflicts with commonly accepted moral and social values.

97. Recognition: The need for explicit acknowledgment or appreciation for one's work accomplishments. Recognition can come from within one's organization (e.g., from management or one's peers) or from outside the organization (e.g., from the community, from professional organizations, etc.).

98. Responsibility: The need to use one's own judgment, to make decisions, and to be accountable for the effects of one's decisions and actions.

99. Security: The need to be assured that one's job or income is steady and does not depend upon seasonal fluctuations, fluctuations in the economic situation, etc.

100. Social Service: The need to work with people to improve their well-being; the need to do things for others.

101. Social Status: The need to hold a position of prestige or standing in the community by virtue of one's job position or occupation.

102. Variety: The need to perform a number of different job activities rather than one or two activities repeatedly; to have new tasks to perform from day to day.

103. Working Conditions: The need to work in an environment with acceptable or pleasant physical working conditions, including such factors as freedom from hazards, comfortable temperature, proper illumination, low noise level, necessary equipment, attractive surroundings, etc.

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[2] The need definitions (Items 87-103) were adapted from the Manual for the Minnesota Importance Questionnaire, copyright 1971 by the Work Adjustment Project, Industrial Relations Center, University of Minnesota.

APPENDIX K

JOB ACTIVITY-BY-ATTRIBUTE INSTRUMENT WITHOUT JOB ACTIVITY STATEMENTS

Job Activity-by-Attribute Instrument

OCCUPATION:

JOB ACTIVITY:

SAMPLE

RATING SCALE

To do this task, the attribute is

0 Not needed; not important
1 Needed once in awhile; of little importance
2
3
4 Needed often; important
5
6
7 Needed most of the time; very important

ATTRIBUTES	RATING
A. General Vocational Capabilities	
1. Tools	0 1 2 3 4 5 6 7
2. Mechanical systems	0 1 2 3 4 5 6 7
3. Stationary machine and equipment operation	0 1 2 3 4 5 6 7
4. Vehicular operation	0 1 2 3 4 5 6 7
5. Connections and fittings	0 1 2 3 4 5 6 7
6. Fluid systems	0 1 2 3 4 5 6 7
7. Measuring instruments	0 1 2 3 4 5 6 7
8. Electricity	0 1 2 3 4 5 6 7
9. Layout and visualization	0 1 2 3 4 5 6 7
10. Structures	0 1 2 3 4 5 6 7
11. Materials	0 1 2 3 4 5 6 7
12. Chemicals	0 1 2 3 4 5 6 7
13. Foods and cooking	0 1 2 3 4 5 6 7
14. Biological systems	0 1 2 3 4 5 6 7
15. Medical and first aid	0 1 2 3 4 5 6 7
16. Arithmetic computation	0 1 2 3 4 5 6 7
17. Arithmetic conventions	0 1 2 3 4 5 6 7
18. Clerical	0 1 2 3 4 5 6 7
19. Verbal communication	0 1 2 3 4 5 6 7
20. Sales	0 1 2 3 4 5 6 7
21. Service	0 1 2 3 4 5 6 7
22. Dealing with social situations	0 1 2 3 4 5 6 7
23. Etiquette and social grace	0 1 2 3 4 5 6 7
24. Style and grooming	0 1 2 3 4 5 6 7
B. Cognitive Abilities	
25. Closure	0 1 2 3 4 5 6 7
26. Form perception	0 1 2 3 4 5 6 7
27. Perceptual speed	0 1 2 3 4 5 6 7
28. Spatial scanning	0 1 2 3 4 5 6 7
29. Spatial orientation	0 1 2 3 4 5 6 7
30. Visualization	0 1 2 3 4 5 6 7
31. Number facility	0 1 2 3 4 5 6 7
32. Memory	0 1 2 3 4 5 6 7
33. Verbal comprehension	0 1 2 3 4 5 6 7
34. Grammar	0 1 2 3 4 5 6 7
35. Spelling	0 1 2 3 4 5 6 7
36. Expressional fluency	0 1 2 3 4 5 6 7
37. Ideational fluency	0 1 2 3 4 5 6 7
38. Sensitivity to problems	0 1 2 3 4 5 6 7
39. Deductive reasoning	0 1 2 3 4 5 6 7
40. Inductive reasoning	0 1 2 3 4 5 6 7
41. Originality	0 1 2 3 4 5 6 7
42. Social intelligence	0 1 2 3 4 5 6 7
43. Aesthetic judgment	0 1 2 3 4 5 6 7
44. Musical aptitude	0 1 2 3 4 5 6 7
C. Psychomotor Abilities	
45. Control precision	0 1 2 3 4 5 6 7
46. Multilimb coordination	0 1 2 3 4 5 6 7
47. Reaction time	0 1 2 3 4 5 6 7
48. Eye-hand coordination	0 1 2 3 4 5 6 7
49. Manual dexterity	0 1 2 3 4 5 6 7
50. Finger dexterity	0 1 2 3 4 5 6 7
51. Arm-hand steadiness	0 1 2 3 4 5 6 7
52. Explosive strength	0 1 2 3 4 5 6 7
53. Static strength	0 1 2 3 4 5 6 7
54. Dynamic strength	0 1 2 3 4 5 6 7
55. Body equilibrium	0 1 2 3 4 5 6 7
56. Stamina	0 1 2 3 4 5 6 7
D. Sensory Capacities	
57. Near visual acuity	0 1 2 3 4 5 6 7
58. Far visual acuity	0 1 2 3 4 5 6 7
59. Depth perception	0 1 2 3 4 5 6 7
60. Color discrimination	0 1 2 3 4 5 6 7
61. Auditory acuity	0 1 2 3 4 5 6 7
62. Tactual discrimination	0 1 2 3 4 5 6 7

Job Activity-by-Attribute Instrument

OCCUPATION:

JOB ACTIVITY:

SAMPLE

RATING SCALE

To do this task, the attribute is

0 Not needed; not important
1 Needed once in awhile; of little importance
2
3
4 Needed often; important
5
6
7 Needed most of the time; very important

ATTRIBUTES	RATING
E. Interests	
63. Manual work	0 1 2 3 4 5 6 7
64. Machine work	0 1 2 3 4 5 6 7
65. Personal service	0 1 2 3 4 5 6 7
66. Care of people or animals	0 1 2 3 4 5 6 7
67. Clerical work	0 1 2 3 4 5 6 7
68. Inspecting and testing	0 1 2 3 4 5 6 7
69. Crafts and precise operations	0 1 2 3 4 5 6 7
70. Customer services	0 1 2 3 4 5 6 7
71. Nursing and related technical services	0 1 2 3 4 5 6 7
72. Skilled personal services	0 1 2 3 4 5 6 7
73. Training	0 1 2 3 4 5 6 7
74. Literary	0 1 2 3 4 5 6 7
75. Numerical	0 1 2 3 4 5 6 7
76. Appraisal	0 1 2 3 4 5 6 7
77. Agriculture	0 1 2 3 4 5 6 7
78. Applied technology	0 1 2 3 4 5 6 7
79. Promotion and communication	0 1 2 3 4 5 6 7
80. Management and supervision	0 1 2 3 4 5 6 7
81. Artistic	0 1 2 3 4 5 6 7
82. Sales representative	0 1 2 3 4 5 6 7
83. Music	0 1 2 3 4 5 6 7
84. Entertainment and performing arts	0 1 2 3 4 5 6 7
85. Teaching, counseling, and social work	0 1 2 3 4 5 6 7
86. Medical	0 1 2 3 4 5 6 7
F. Needs	
87. Ability utilization	0 1 2 3 4 5 6 7
88. Achievement	0 1 2 3 4 5 6 7
89. Activity	0 1 2 3 4 5 6 7
90. Advancement	0 1 2 3 4 5 6 7
91. Authority	0 1 2 3 4 5 6 7
92. Compensation	0 1 2 3 4 5 6 7
93. Co-workers	0 1 2 3 4 5 6 7
94. Creativity	0 1 2 3 4 5 6 7
95. Independence	0 1 2 3 4 5 6 7
96. Moral values	0 1 2 3 4 5 6 7
97. Recognition	0 1 2 3 4 5 6 7
98. Responsibility	0 1 2 3 4 5 6 7
99. Security	0 1 2 3 4 5 6 7
100. Social service	0 1 2 3 4 5 6 7
101. Social status	0 1 2 3 4 5 6 7
102. Variety	0 1 2 3 4 5 6 7
103. Working conditions	0 1 2 3 4 5 6 7

APPENDIX L

OCCUPATION-BY-ATTRIBUTE INSTRUMENT COMPARATIVE DATA ANALYSIS ACROSS THREE OCCUPATIONS USING WORKERS AND SUPERVISORS

OCCUPATION-BY-ATTRIBUTE RATINGS BY WORKERS AND SUPERVISORS FOR THE OCCUPATION OF GENERAL SECRETARY

Supervisor Median 3.5 and 3.0 significant ratings		Workers Median 3.5 and 3.0 significant ratings		Total Combined Worker and Supervisor Median 3.5 and 3.0 significant ratings	
Supervisor		Worker		Total	
-3.5	-3.0	-3.5	-3.0	-3.5	-3.0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15
16					
17	17			17	
20	20	20	20	20	20
21	21	21	21	21	21
25	25	25	25	25	25
26	26	26	26	26	26
28	28	28	28	28	28
29	29	29	29	29	29

OCCUPATION-BY-ATTRIBUTE RATINGS BY WORKERS AND SUPERVISORS FOR THE OCCUPATION OF GENERAL SECRETARY (Continued)

Supervisor Median 3.5 and 3.0 significant ratings		Workers Median 3.5 and 3.0 significant ratings		Total Combined Worker and Supervisor Median 3.5 and 3.0 significant ratings	
Supervisor		**Worker**		**Total**	
-3.5	**-3.0**	**-3.5**	**-3.0**	**-3.5**	**-3.0**
		30	30	30	30
		31	31	31	31
		32	32		
		33	33		
		34	34		
		35	35		
		36			
37	37	37	37	37	37
38	38			38	38
39	39			39	
40	40	40	40	40	40
41	41	41	41	41	41
		42			
43	43	43	43	43	43
44	44	44	44	44	44
45	45	45	45	45	45
46	46	46	46	46	46
47	47	47	47	47	47
48	48	48	48	48	48
49	49	49	49	49	49
51	51	51	51	51	51
52	52	52	52	52	52
53	53	53	53	53	53
54	54	54	54	54	54
55	55	55	55	55	55
56	56	56		56	56
58	58	58	58	58	58
59	59	59	59	59	59
60	60	60	60	60	60
61	61			61	61
62	62	62	62	62	62

OCCUPATION-BY-ATTRIBUTE RATINGS BY WORKERS AND SUPERVISORS FOR THE OCCUPATION OF GENERAL SECRETARY (Continued)

Supervisor Median 3.5 and 3.0 significant ratings		Workers Median 3.5 and 3.0 significant ratings		Total Combined Worker and Supervisor Median 3.5 and 3.0 significant ratings	
Supervisor		Worker		Total	
-3.5	-3.0	-3.5	-3.0	-3.5	-3.0
63	63				
64	64	64		64	64
65	65	65	65	65	65
66	66	66	66	66	66
68	68	68	68	68	68
69	69	69	69	69	69
71	71	71	71	71	71
72	72	72	72	72	72
73	73	73	73	73	73
74		74	74	74	74
75	75	75	75	75	75
76	76	76	76	76	76
77	77	77	77	77	77
78	78	78	78	78	78
		79	79		
80	80	80	80	80	80
81	81	81	81	81	81
82	82	82	82	82	82
83	83	83	83	83	83
84	84	84	84	84	84
85	85	85	85	85	85
86	86	86	86	86	86
91	91	91	91	91	91
100					
101	101	101	101	101	101

OCCUPATION-BY-ATTRIBUTE RATINGS BY WORKERS AND SUPERVISORS FOR THE OCCUPATION OF AUTOMOTIVE MECHANIC

Supervisor Median 3.5 and 3.0 significant ratings		Workers Median 3.5 and 3.0 significant ratings		Total Combined Worker and Supervisor Median 3.5 and 3.0 significant ratings	
Supervisor		**Worker**		**Total**	
-3.5	-3.0	-3.5	-3.0	-3.5	-3.0
9	9	9	9	9	9
10	10	10	10	10	10
11		11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15
16					
17	17			17	17
18	18			18	18
19	19				
20		20	20	20	20
		22	22	21	21
22	22			22	22
23	23			23	23
25	25	25	25	25	25
26	26	26	26	26	26
27	27				
28	28	28	28	28	28
29	29	29	29	29	29
30	30			30	
31	31			31	
		32	32		
33	33			33	
34	34		34	34	
35	35			35	
36	36	36		36	36
37	37			37	37
39	39				
40	40			40	

OCCUPATION-BY-ATTRIBUTE RATINGS BY WORKERS AND SUPERVISORS FOR THE OCCUPATION OF AUTOMOTIVE MECHANIC (Continued)

Supervisor Median 3.5 and 3.0 significant ratings		Workers Median 3.5 and 3.0 significant ratings		Total Combined Worker and Supervisor Median 3.5 and 3.0 significant ratings	
Supervisor		Worker		Total	
-3.5	-3.0	-3.5	-3.0	-3.5	-3.0
41	41				
42				42	42
43				43	43
44	44	44	44	44	44
56	56				
59					
65	65				
66	66			66	66
67	67	67	67	67	67
71	71	71	71	71	71
72	72			72	
74	74	74	74	74	74
75	75	75	75	75	75
76	76			76	
77	77	77	77	77	77
78	78	78	78	78	78
79	79	79	79	79	79
80				80	
81	81	81	81	81	81
82	82	82	82	82	82
83	83	83	83	83	83
84	84	84	84	84	84
85	85	85	85	85	85
86	86	86	86	86	86
91	91				
100	100				
101	101	101		101	

OCCUPATION-BY-ATTRIBUTE RATINGS BY WORKERS AND SUPERVISORS FOR THE OCCUPATION OF BUSINESS DATA PROGRAMMER

Supervisor Median 3.5 and 3.0 significant ratings		Workers Median 3.5 and 3.0 significant ratings		Total Combined Worker and Supervisor Median 3.5 and 3.0 significant ratings	
Supervisor		**Worker**		**Total**	
-3.5	-3.0	-3.5	-3.0	-3.5	-3.0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15
18	18	18	18	18	18
20	20	20	20	20	20
21	21	21	21	21	21
23	23	23	23	23	23
24	24	24	24	24	24
25	25	25	25	25	25
26	26	26	26	26	26
27	27	27	27	27	27
28	28	28	28	28	28
29	29	29	29	29	29
30	30	30	30	30	30
32					
34	34			34	
35					

OCCUPATION-BY-ATTRIBUTE RATINGS BY WORKERS AND SUPERVISORS FOR THE OCCUPATION OF BUSINESS DATA PROGRAMMER (Continued)

Supervisor Median 3.5 and 3.0 significant ratings		Workers Median 3.5 and 3.0 significant ratings		Total Combined Worker and Supervisor Median 3.5 and 3.0 significant ratings	
Supervisor		**Worker**		**Total**	
-3.5	-3.0	-3.5	-3.0	-3.5	-3.0
37	37	37		37	
		41		41	
42	42	42	42	42	42
43	43	43	43	43	43
44	44	44	44	44	44
45	45	45	45	45	45
46	46	46	46	46	46
47	47	47	47	47	47
48	48	48	48	48	48
49	49	49	49	49	49
50	50	50	50	50	50
51	51	51	51	51	51
52	52	52	52	52	52
53	53	53	53	53	53
54	54	54	54	54	54
55	55	55	55	55	55
56	56	56	56	56	56
57	57	57	57	57	57
58	58	58	58	58	58
59	59	59	59	59	59
60	60	60	60	60	60
61	61	61	61	61	61
62	62	62	62	62	62
63	63	63	63	63	63
64	64	64	64	64	64
65	65	65	65	65	65
66	66	66	66	66	66
67	67			67	
68	68			68	68
69	69	69	69	69	69

OCCUPATION-BY-ATTRIBUTE RATINGS BY WORKERS AND SUPERVISORS FOR THE OCCUPATION OF BUSINESS DATA PROGRAMMER (Continued)

Supervisor Median 3.5 and 3.0 significant ratings	Workers Median 3.5 and 3.0 significant ratings	Total Combined Worker and Supervisor Median 3.5 and 3.0 significant ratings

Supervisor		**Worker**		**Total**	
-3.5	-3.0	-3.5	-3.0	-3.5	-3.0
70					
71	71	71	71	71	71
72	72	72	72	72	72
73	73				
76	76			76	
77	77	77	77	77	77
		78	78	78	
81	81	81	81	81	81
82	82	82	82	82	82
83	83	83	83	83	83
84	84	84	84	84	84
85	85	85		85	85
86	86	86	86	86	86
		91		91	
		96		96	
100	100	100		100	100
101	101	101	101	101	101

APPENDIX M

OVERVIEW MATRIX OF JOB-ACTIVITY-BY-ATTRIBUTE INSTRUMENT FOR THE THREE OCCUPATIONS

OCCUPATIONAL JOB ACTIVITIES BY ATTRIBUTES

General Vocational Capabilities

Automotive Mechanic Job Activity #

Attributes		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Attributes Rated 1.5 and above	1		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	3		x	x	x	x	x	x	x	x			x	x	x		x	x	x	x	x	
	4	x	x	x	x		x	x	x		x	x	x	x	x	x	x	x	x	x	x	x
	5		x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	6		x		x	x							x	x	x			x	x		x	
	7					x	x	x	x				x	x	x			x	x		x	
	8	x	x					x	x	x	x	x			x	x	x					
	9		x			x	x	x	x	x	x	x	x	x	x	x	x		x		x	
	10		x			x		x	x				x	x	x				x		x	
	11		x			x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x
	12																					
	13																					
	14																					
	15																					
	16					x							x									
	17					x																
	18																					
	19	x																				
	20	x																				
	21	x																				
	22																					
	23																					
	24																					
Attributes Rated 1.0 - 1.49	1																					
	2																					
	3																					
	4																					
	5																					
	6	x																				
	7		x							x												
	8																					
	9																					
	10				x		x					x				x	x					
	11				x																	
	12																					
	13																					
	14																					
	15																					
	16		x				x															
	17																					
	18		x																			
	19		x																			
	20																					
	21		x																			
	22																					
	23																					
	24	x																				

General Secretary Job Activity #

Attributes		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Attributes Rated 1.5 and above	1																						
	2																						
	3								x							x							
	4																						
	5																						
	6																						
	7				x																		
	8																						
	9																						
	10																						
	11																						
	12																						
	13																						
	14																						
	15																						
	16	x														x	x	x				x	x
	17	x															x	x				x	x
	18	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	19	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	
	20						x																
	21	x	x			x	x										x						
	22	x				x	x			x	x						x		x	x	x	x	
	23																						
	24	x	x		x	x	x	x	x	x	x					x			x		x	x	
Attributes Rated 1.0 - 1.49	1																						
	2										x												
	3																						
	4																						
	5																						
	6																						
	7																						
	8																						
	9				x																		
	10																						
	11																						
	12																						
	13																						
	14																						
	15																						
	16										x	x								x			
	17																						
	18																						
	19																						
	20																				x	x	
	21																					x	
	22																						
	23																						
	24																		x				

Data Programmer Job Activity #

Attributes		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Attributes Rated 1.5 and above	1																			
	2																			
	3																			
	4																			
	5																			
	6																			
	7																			
	8																			
	9			x																
	10																			
	11																			
	12																			
	13																			
	14																			
	15																			
	16	x	x	x	x	x		x		x	x	x	x	x	x		x		x	x
	17	x	x	x	x	x		x		x	x	x	x	x	x		x		x	x
	18			x										x	x					x
	19	x	x					x												
	20																			
	21	x	x																	
	22																			
	23																			
	24																			
Attributes Rated 1.0 - 1.49	1																			
	2																			
	3																			
	4																			
	5																			
	6																			
	7																			
	8																			
	9																			
	10																			
	11																			
	12																			
	13																			
	14																			
	15																			
	16																			
	17																			
	18	x			x				x				x				x	x		x
	19									x							x			x
	20																			
	21																			
	22																			
	23																			
	24																			

OCCUPATIONAL JOB ACTIVITIES

		Automotive Mechanic Job Activity #																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Attributes Rated 3.5 and above	25		x			x						x										
	26	x	x			x																
	27		x		x																	
	28																					
	29																					
	30		x			x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x
	31		x																			
	32	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	33	x	x																			
	34		x																			
	35	x	x																			
	36	x	x																			
	37																					
	38	x	x																			
	39	x	x		x	x	x	x	x	x	x	x	x	x	x	x		x	x		x	
	40		x			x		x	x	x	x		x	x	x	x		x	x		x	
	41																					
	42																					
	43																					
	44																					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Attributes Rated 3.0 - 3.49	25																					
	26						x	x	x										x			
	27																					
	28		x					x											x			
	29		x																			
	30																					
	31																					
	32																					
	33							x														
	34																					
	35																					
	36																					
	37	x	x																			
	38																					
	39																					
	40																				x	
	41																					
	42		x																			
	43		x																			
	44																					

		General Secretary Job Activity #																					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Attributes Rated 3.5 and above	25																						
	26																	x					x
	27	x	x	x	x			x	x		x	x											
	28																						
	29																						
	30				x					x	x												x
	31	x	x												x	x					x	x	
	32	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	33	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	34	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x
	35	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	36	x	x	x	x	x	x	x	x	x	x	x		x		x	x	x	x	x	x	x	x
	37					x	x	x		x		x					x	x	x		x		x
	38	x	x			x	x	x		x	x	x		x	x		x		x	x	x		
	39	x	x		x	x	x	x		x				x	x		x		x	x			
	40	x	x			x	x	x		x							x		x				
	41	x	x		x	x	x			x		x	x	x		x							x
	42	x				x	x			x									x		x		
	43																						
	44																						
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Attributes Rated 3.0 - 3.49	25	x																					
	26																						
	27																						
	28																						
	29																						
	30										x			x				x					
	31				x				x		x										x		
	32																						
	33																						
	34															x							
	35																						
	36														x								
	37				x			x			x									x		x	
	38			x	x											x		x					x
	39			x							x					x		x			x	x	x
	40			x															x	x	x		
	41																						
	42		x		x										x	x				x		x	
	43																						
	44																						

		Data Programmer Job Activity #																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Attributes Rated 3.5 and above	25																				
	26																				
	27	x		x				x					x								
	28																				
	29																				
	30																				
	31	x	x	x	x	x	x	x		x	x	x	x	x	x	x		x	x	x	x
	32	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	33	x	x					x	x	x	x	x	x	x			x			x	x
	34		x	x					x					x							x
	35		x	x							x			x							x
	36		x	x	x			x	x			x	x	x	x			x		x	x
	37		x					x			x	x	x	x		x		x		x	x
	38	x	x		x			x			x	x	x	x	x	x	x	x		x	x
	39	x	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x	x	x
	40	x	x	x	x	x		x			x	x	x		x		x			x	x
	41									x	x	x	x							x	x
	42																				
	43																				
	44																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Attributes Rated 3.0 - 3.49	25																				
	26																				
	27																				
	28																				
	29																				
	30																				
	31						x														
	32																				
	33						x												x		
	34	x		x																	
	35	x																			
	36															x					
	37															x					
	38						x		x	x							x		x		
	39								x					x			x				
	40									x				x			x		x		
	41	x	x		x												x	x			
	42																				
	43																				
	44																				

OCCUPATIONAL JOB ACTIVITIES BY ATTRIBUTES

Psychomotor Abilities		Automotive Mechanic Job Activity #																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Rated 3.5 and above	45	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	46	x		x	x	x	x	x	x	x	x	[illegible]	x	x	x	x	x	x	x	x	x	x
	47	x		x	x		x							x	x	x			x	x	x	x
	48	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	49		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	50		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	51		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	52				x				x				x		x						x	
	53				x				x						x						x	
	54				x									x	x						x	
	55				x								x	x	x	x	x	x		x	x	
	56				x	x									x					x	x	
Rated 3.0 - 3.49	45																					
	46																					
	47					x		x	x								x	x				
	48																					
	49																					
	50		x																			
	51		x																			
	52						x											x				
	53						x						x					x		x		
	54						x						x					x		x		
	55		x	x		x	x	x	x			x										
	56			x			x	x	x		x									x		

Psychomotor Abilities		General Secretary Job Activity #																					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Rated 3.5 and above	45	x	x		x							x											
	46	x	x	x	x				x		x	x						x					
	47				x	x		x	x							x				x		x	x
	48	x	x	x	x	x			x	x	x	x	x	x		x	x	x		x		x	x
	49	x	x	x	x	x		x	x	x	x	x	x	x	x			x		x		x	
	50	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x		x	
	51	x	x	x	x	x		x	x	x	x	x	x	x		x	x	x		x		x	x
	52																						
	53																						
	54																						
	55				x																		
	56																						
Rated 3.0 - 3.49	45												x										
	46					x														x			
	47	x										x				x			x		x		
	48														x				x		x		
	49																						
	50																						
	51														x								
	52																						
	53																						
	54																						
	55																						
	56																						

Psychomotor Abilities		Data Programmer Job Activity #																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Rated 3.5 and above	45																				
	46																				
	47																				
	48																				
	49																				
	50																				
	51																				
	52																				
	53																				
	54																				
	55																				
	56																				
Rated 3.0 - 3.49	45																				
	46																				
	47																				
	48																				
	49																				
	50																				
	51																				
	52																				
	53																				
	54																				
	55																				
	56																				

OCCUPATIONAL JOB ACTIVITIES BY ATTRIBUTES

Sensory Capacities

	Automotive Mechanic Job Activity #																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
57		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
58		x	x	x		x	x	x	x	x	x	x	x	x	x	x					
59		x	x	x	x	x	x	x		x	x	x	x	x	x	x	x			x	
60		x					x	x	x	x	x				x	x					
61	x	x																			
62						x						x		x							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
57																					
58					x													x		x	x
59	x								x									x			x
60	x				x							x		x							
61																					
62		x			x					x								x			

	General Secretary Job Activity #																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
57	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
58						x																
59																	x					
60												x					x					
61					x	x	x	x										x	x	x		
62																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
57																						
58			x															x				
59			x	x				x			x							x				
60			x	x														x				
61																x						
62																						

	Data Programmer Job Activity #																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
57			x	x						x		x	x	x	x	x	x	x	x	x
58																				
59																				
60																				
61																				
62																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
57	x	x			x	x					x									
58																				
59																				
60																				
61																				
62																				

OCCUPATIONAL JOB ACTIVITIES

Automotive Mechanic Job Activity

Interests — Attributes Rated 3.5 and above

Interests	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
63		X																			
64																					
65																					
66																					
67																					
68	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X
69		X		X	X	X		X	X							X					
70	X	X														X				X	
71																					
72				X		X		X													
73	X	X		X	X	X	X	X	X	X	X	X	X	X				X		X	
74																					
75																					
76		X																			
77																					
78		X				X	X														
79	X																				
80	X	X																			
81																					
82	X																				
83																					
84																					
85																					
86																					

Interests — Attributes Rated 3.0 - 3.49

Interests	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
63	X																				
64				X					X		X					X	X				
65																					
66																					
67		X																			
68																					
69	X			X									X								
70																					
71																					
72									X		X	X									
73																					
74		X																			
75					X																
76	X																				
77																					
78																					
79		X																			
80																					
81																					
82																					
83																					
84																					
85																					
86																					

General Secretary Job Activity

Interests — Attributes Rated 3.5 and above

Interests	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
63				X																		
64								X														
65	X				X	X										X						
66																						
67	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
68																						
69																						
70	X	X			X	X																
71																						
72																						
73																		X				
74		X											X									
75	X	X											X	X		X	X		X			X
76																						
77																						
78																						
79	X	X			X	X	X											X				
80																		X				
81																						
82																						
83																						
84																						
85																						
86																						

Interests — Attributes Rated 3.0 - 3.49

Interests	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
63				X																		
64					X																	
65																						
66																						
67																						
68																						
69																						
70				X												X				X		
71																						
72																						
73	X	X																				
74	X			X				X				X							X			
75				X				X	X			X			X							
76																						
77																						
78																						
79																						
80		X																				
81																						
82																						
83																						
84																						
85																						
86																						

Data Programmer Job Activity

Interests — Attributes Rated 3.5 and above

Interests	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
63																				
64																				
65																X				
66																				
67																				
68						X	X				X	X			X				X	
69																				
70		X								X						X				
71																				
72																				
73																				
74							X	X												
75	X	X	X	X	X				X	X	X	X		X	X		X	X	X	X
76		X							X			X								
77							X													
78										X									X	
79																			X	
80																			X	
81																				
82																				
83																				
84																				
85																				
86																				

Interests — Attributes Rated 3.0 - 3.49

Interests	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
63																				
64																				
65																				
66																				
67			X					X		X		X	X				X			
68	X			X	X	X				X										
69	X											X	X		X					X
70																				
71																				
72																				
73																				
74			X																	
75																X				
76	X																			
77																				
78			X								X	X			X				X	
79																				
80																				
81																				
82																				
83																				
84																				
85																				
86																				

OCCUPATIONAL JOB ACTIVITIES

Needs		Automotive Mechanic Job Activity #																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Attributes Rated 3.5 and above	87	x	x		x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x
	88	x	x		x	x	x	x	x		x	x	x	x	x	x	x	x	x		x	x
	89	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	90	x					x															
	91					x																
	92	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	93	x	x		x	x		x	x	x	x	x		x	x	x	x	x	x	x	x	x
	94		x																			
	95				x	x																
	96	x	x										x									
	97	x	x		x	x	x	x	x	x												
	98	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x
	99	x	x	x	x		x	x	x	x	x	x										
	100																					
	101																					
	102	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	103	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Attributes Rated 1.0 - 3.49	87			x							x											
	88									x										x		
	89			x																		
	90		x					x		x		x										
	91						x															
	92				x																	
	93			x			x															
	94																					
	95						x		x	x												
	96																					
	97			x																		
	98																			x		
	99																					
	100																					
	101																					
	102		x																			
	103				x																	

Needs		General Secretary Job Activity #																					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Attributes Rated 3.5 and above	87	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	88	x	x	x	x	x	x	x	x	x	x	x		x	x	x		x	x	x	x	x	x
	89	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x
	90	x	x	x	x	x	x	x	x														
	91	x	x			x	x	x	x	x		x	x		x	x	x		x			x	
	92	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	93	x	x		x	x	x	x		x		x	x				x	x	x	x	x	x	x
	94	x	x		x	x	x		x	x	x	x	x	x	x	x		x	x	x	x	x	x
	95	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	96	x	x	x	x	x	x	x		x									x	x	x	x	x
	97	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	98	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	99	x	x	x	x	x	x	x	x	x	x		x		x	x	x	x	x		x	x	x
	100	x	x	x	x	x	x	x			x						x		x	x	x	x	
	101	x	x	x	x	x	x	x											x	x	x	x	x
	102	x	x	x	x	x	x	x	x	x	x				x		x	x	x	x	x	x	x
	103	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Attributes Rated 1.0 - 3.49	87																						
	88												x			x	x						
	89																						
	90									x													
	91				x						x			x									
	92																						
	93			x																			
	94																x			x	x		x
	95															x							
	96																	x		x			x
	97																						
	98																						
	99									x										x			x
	100														x	x		x		x			
	101																x	x		x	x	x	
	102																						
	103																						

Needs		Data Programmer Job Activity #																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	15	17	18	19	20
Attributes Rated 3.5 and above	87	x		x	x			x			x	x	x	x		x		x	x	x	x
	88	x		x	x	x	x	x	x			x	x	x		x					
	89	x		x	x			x	x		x	x	x	x		x				x	x
	90	x												x		x					
	91								x												x
	92	x					x		x												x
	93	x	x				x	x	x				x	x							x
	94	x	x	x	x	x		x	x			x	x	x						x	x
	95	x		x	x			x				x									x
	96																				
	97	x	x									x	x				x			x	x
	98	x	x	x	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x
	99																				
	100																				
	101																				
	102				x								x								x
	103	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Attributes Rated 1.0 - 3.49	87		x				x		x												
	88		x														x				
	89		x			x	x										x	x	x		
	90						x	x	x			x			x		x	x			
	91	x												x						x	
	92				x			x			x	x	x			x		x	x	x	x
	93			x	x	x				x	x				x				x	x	
	94									x	x				x	x		x			
	95		x			x				x	x		x	x	x			x	x	x	
	96	x																			
	97			x	x		x	x	x		x			x				x	x		
	98						x														
	99	x																			
	100																				x
	101																				
	102	x	x	x			x	x	x			x		x		x				x	
	103																				

APPENDIX N

FINAL VERSION OF THE JOB-ACTIVITY-BY-ATTRIBUTE SURVEY INSTRUMENT FOR THE THREE OCCUPATIONS

JOB ACTIVITY-BY-ATTRIBUTE SURVEY

Business Data Programmer

THE CENTER FOR VOCATIONAL EDUCATION
THE OHIO STATE UNIVERSITY
1960 Kenny Road · Columbus, Ohio 43210

Job Activity - by - Attribute Survey

Purpose of Study

As a knowledgeable and skilled worker or supervisor in one of the occupations--automotive mechanic, business data programmer, or general secretary, you have been selected to provide information for an important study* at The Center for Vocational Education, The Ohio State University. Your responses to this survey form along with those of other workers and supervisors will contribute to the development of a manual and a guide for providing needed information for counselors, teachers, or employers to assist individuals who are determining their occupational plans or anticipating employment requirements and preparation.

Your participation in this study involves your providing us with your best judgment regarding 38 human characteristics or attributes related to specific job activities identified for your occupation. You are asked to respond to this survey form by circling one of the numbers (0, 1, 2, 3, 4, 5, 6, or 7 of the rating scale defined at the top of the rating sheet) opposite each of the 38 attributes for each job activity.

You have also been provided a booklet of definitions of the human attributes (characteristics) which are numbered to correspond with each of the attributes on the rating sheet. You may refer to any of the definitions you wish as you circle answers.

The project staff sincerely thanks you for your important contribution to this study.

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*The study is sponsored through a grant of the U.S. Office of Education.

BACKGROUND INFORMATION

CHECK YOUR PRESENT JOB TITLE:

Manager, Data Processing ☐
Manager, Computer Operations ☐
Manager, EDP ☐
Systems Engineer ☐
Systems Programmers ☐
Systems and Procedures Analysts ☐
OTHER (Specify) ____________

Senior Programmer ☐
Lead Programmer ☐
Programmer ☐
Programmer, Junior ☐
Computer Console Operator ☐
Data Converting Operator ☐

CHECK THE TYPE OF BUSINESS YOU ARE EMPLOYED IN:

Manufacturing ☐
Insurance ☐
Distribution (Wholesale-Retail) ☐
Banking-Finance ☐
Data Processing Service Bureaus ☐
OTHER (Specify) ____________

Public Utilities ☐
Research and Education ☐
Government ☐
Publishing ☐
Construction ☐

---

1. How many years have you worked at your present job? ________
2. How many years have you worked in Data Processing? ________
3. How many other Business Data Programmers do you work with in performing your duties?

   ____

4. To how many others are you responsible? ________

WHERE DID YOU RECEIVE YOUR TRAINING IN DATA PROCESSING?

(Check one or more)

On-the-job (Self-Learned) ☐
Military training school ☐
Company In-plant training programs ☐
Equipment manufacturers' training programs ☐
Correspondence courses ☐
OTHER (Specify) ____________

Public secondary schools ☐
Public vocational-technical schools ☐
Junior college ☐
College or university ☐
Private business school ☐
Military experiences ☐

Directions for Marking Rating Sheets

1. Read the rating scale (0-7) at the top right-hand corner of the rating sheet. This rating scale is used for each of your responses.

2. Read the job activity statement of the stated occupation in the upper left-hand corner of the survey rating sheet.

3. For each job activity, there are 38 human characteristics or attributes listed with the set of numbers 0 to 7 following each. You are to rate the degree to which demonstration of this attribute is required to perform a given job activity by circling one of the appropriate numbers (0, 1, 2, 3, 4, 5, 6, or 7) following each attribute. It is very important that you circle only one number for each attribute.

   NOTE: The 0-7 Scale provides you with eight levels of degrees to which demonstration of an attribute is required to perform a respective job activity. 0 designates not required and 7 designates that demonstration of this attribute is required to a very high degree. The numbers 1, 2, 3, 4, 5, and 6 provide levels of degrees to which demonstration of an attribute is requried to perform a respective job activity between the two extremes 0 and 7.

EXAMPLE

Occupation:

Business Data Programmer

Job Activity:

Interaction with Supervisor

Rating Scale
To perform this job activity, demonstration of this attribute is

0 Not required
1 Required to a very minimal degree
2 Required to a minimal degree
3 Required to a low moderate degree
4 Required to a moderate degree
5 Required to a high moderate degree
6 Required to a high degree
7 Required to a very high degree

ATTRIBUTE	RATING
A. Cognitive Attribute	
1. Closure	0 1 2 [✓ 3] 4 5 6 7

4. Be certain to circle a number for each attribute for each job activity. Also be certain that you have checked appropriately the background information sheet at the front of the survey booklet.

5. Attributes that are not clear to you, may be looked up in the Attribute Definition Booklet. Each number preceding each attribute on the rating sheet corresponds to its respective number in the Definition Booklet. Return your Definition Booklet and survey forms with your name (optional) and organization written on the cover.

6. Thank you very much for your cooperation and assistance.

7.

Statement of Confidentiality

The Center for Vocational Education wishes to reaffirm its previous commitment to complete confidentiality. The published data will not be associated with any individual or agency.

Job Activity-by-Attribute Survey

Occupation: Business Data Programmer

Job Activity:

Devise sample input data to provide test of program adequacy.

Rating Scale
To perform this job activity, demonstration of this attribute is

0 Not required
1 Required to a very minimal degree
2 Required to a minimal degree
3 Required to a low moderate degree
4 Required to a moderate degree
5 Required to a high moderate degree
6 Required to a high degree
7 Required to a very high degree

Note: Use one job activity statement per page. Job activity statements follow.

	ATTRIBUTES	RATING
A.	Cognitive Attribute	
1.	Closure	0 1 2 3 4 5 6 7
2.	Form perception	0 1 2 3 4 5 6 7
3.	Perceptual speed	0 1 2 3 4 5 6 7
4.	Spatial scanning	0 1 2 3 4 5 6 7
5.	Spatial orientation	0 1 2 3 4 5 6 7
6.	Visualization	0 1 2 3 4 5 6 7
7.	Number facility	0 1 2 3 4 5 6 7
8.	Memory	0 1 2 3 4 5 6 7
9.	Verbal comprehension	0 1 2 3 4 5 6 7
10.	Grammar	0 1 2 3 4 5 6 7
11.	Spelling	0 1 2 3 4 5 6 7
12.	Expressional fluency	0 1 2 3 4 5 6 7
13.	Ideational fluency	0 1 2 3 4 5 6 7
14.	Sensitivity to problems	0 1 2 3 4 5 6 7
15.	Deductive reasoning	0 1 2 3 4 5 6 7
16.	Inductive reasoning	0 1 2 3 4 5 6 7
17.	Originality	0 1 2 3 4 5 6 7
18.	Social intelligence	0 1 2 3 4 5 6 7
19.	Aesthetic judgment	0 1 2 3 4 5 6 7
20.	Musical aptitude	0 1 2 3 4 5 6 7
B.	Psychomotor Attributes	
21.	Control precision	0 1 2 3 4 5 6 7
22.	Multilimb coordination	0 1 2 3 4 5 6 7
23.	Reaction time	0 1 2 3 4 5 6 7
24.	Eye-hand coordination	0 1 2 3 4 5 6 7

	ATTRIBUTES	RATING
25.	Manual dexterity	0 1 2 3 4 5 6 7
26.	Finger dexterity	0 1 2 3 4 5 6 7
27.	Arm-hand steadiness	0 1 2 3 4 5 6 7
28.	Explosive strength	0 1 2 3 4 5 6
29.	Static strength	0 1 2 3 4 5 6 7
30.	Dynamic strength	0 1 2 3 4 5 6 7
31.	Body equilibrium	0 1 2 3 4 5 6 7
32.	Stamina	0 1 2 3 4 5 6 7
C.	Sensory Capacity Attributes	
33.	Near visual acuity	0 1 2 3 4 5 6 7
34.	Far visual acuity	0 1 2 3 4 5 6 7
35.	Depth perception	0 1 2 3 4 5 6 7
36.	Color discrimination	0 1 2 3 4 5 6 7
37.	Auditory acuity	0 1 2 3 4 5 6 7
38.	Tactual discrimination	0 1 2 3 4 5 6 7

JOB ACTIVITY-BY-ATTRIBUTE SURVEY

OCCUPATION: BUSINESS DATA PROGRAMMER

JOB ACTIVITY STATEMENTS

1. Analyze all or part of workflow chart or diagram representing business problem by applying knowledge of computer capabilities, subject matter, algebra, and symbolic logic to develop sequence of program steps.

2. Confer with supervisor and representative of departments affected by program to resolve questions of program intent, output requirements, input data acquisition, extent of automatic programming and coding use and modification, and inclusion of internal checks and controls.

3. Write detailed logical flow chart in symbolic form to represent work order of data to be processed by computer system, and to describe input, output, and arithmetic and logical operations involved.

4. Convert detailed logical flow chart to language processable by computer.

5. Devise sample input data to provide test of program adequacy.

6. Prepare block diagram to specify equipment configuration.

7. Observe or run test of coded program on computer, using actual or sample input data.

8. Correct program errors by such methods as altering program steps and sequence.

9. Prepare written instructions (run book) to guide operating personnel during production runs.

10. Analyze, review, and rewrite programs to increase operating efficiency or adapt to new requirements.

11. Compile documentation of program development and subsequent revisions.

12. Write program for one make and type of computer.

JOB ACTIVITY-BY-ATTRIBUTE SURVEY

General Secretary

THE CENTER FOR VOCATIONAL EDUCATION
THE OHIO STATE UNIVERSITY
1960 Kenny Road · Columbus, Ohio 43210

Job Activity - by - Attribute Survey

Purpose of Study

As a knowledgeable and skilled worker or supervisor in one of the occupations--automotive mechanic, business data programmer, or general secretary, you have been selected to provide information for an important study* at The Center for Vocational Education, The Ohio State University. Your responses to this survey form along with those of other workers and supervisors will contribute to the development of a manual and a guide for providing needed information for counselors, teachers, or employers to assist individuals who are determining their occupational plans or anticipating employment requirements and preparation.

Your participation in this study involves your providing us with your best judgment regarding 38 human characteristics or attributes related to specific job activities identified for your occupation. You are asked to respond to this survey form by circling one of the numbers (0, 1, 2, 3, 4, 5, 6, or 7 of the rating scale defined at the top of the rating sheet) opposite each of the 38 attributes for each job activity.

You have also been provided a booklet of definitions of the human attributes (characteristics) which are numbered to correspond with each of the attributes on the rating sheet. You may refer to any of the definitions you wish as you circle answers.

The project staff sincerely thanks you for your important contribution to this study.

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*The study is sponsored through a grant of the U.S. Office of Education.

BACKGROUND INFORMATION

CHECK YOUR PRESENT JOB TITLE:

Receiptionist ☐
Typist ☐
Stenographer ☐
OTHER (Specify) ______________________

General Secretary ☐
Legal Secretary ☐
Medical Secretary ☐

Office Manager ☐
Executive Secretary ☐
Administrative Assistant ☐

CHECK THE TYPE OF BUSINESS IN WHICH YOU ARE EMPLOYED:

Banking-Finance ☐
Construction ☐
Distribution (Wholesale-Retail) ☐
Educational + Research ☐
OTHER (Specify) ______________________

Insurance ☐
Manufacturing ☐
Public Utilities ☐
Publishing ☐

Legal Service ☐
Health Service ☐
Transportation ☐
Governmental ☐

---

1. How many years have you worked at your present job? ____________
2. How many years have you worked in the Secretarial field? ____________
3. How many other secretaries do you work with in performing your duties? ____________
4. To how many others are you responsible? ____________

WHERE DID YOU RECEIVE YOUR TRAINING IN THE SECRETARIAL FIELD?

On the job (self-Learned) ☐
Military school ☐
Correspondence courses ☐
Public secondary school ☐
OTHER (Specify) ________________

Public vocational-technical school ☐
Private business school ☐
Junior college ☐
College or university ☐

Directions for Marking Rating Sheets

1. Read the rating scale (0-7) at the top right-hand corner of your rating sheet. This rating scale is used for each of your responses.

2. Read the job activity statement for the stated occupation in the upper left-hand corner of the survey rating sheet.

3. For each job activity, there are 38 human characteristics or attributes listed with the set of numbers 0 to 7 following each. You are to rate the degree to which demonstration of this attribute is required to perform a given job activity by circling one of the appropriate numbers (0, 1, 2, 3, 4, 5, 6, or 7) following each attribute. It is very important that you circle only one number for each attribute.

NOTE: The 0-7 scale provides you with eight levels of degrees to which demonstration of an attribute is required to perform a respective job activity. 0 designates not required and 7 designates that demonstration of this attribute is required to a very high degree. The numbers 1, 2, 3, 4, 5, and 6 provide levels of degrees to which demonstration of an attribute is required to perform a respective job activity between the two extremes 0 and 7.

EXAMPLE

Occupation:

General Secretary

Job Activity:

Maintain confidentiality in delicate matters.

Rating Scale
To perform this job activity, demonstration of the attribute is

0 Not required
1 Required to a very minimal degree
2 Required to a minimal degree
3 Required to a low moderate degree
4 Required to a moderate degree
5 Required to a high moderate degree
6 Required to a high degree
7 Required to a very high degree

ATTRIBUTE	RATING
A. Cognitive Attributes	
1. Closure	0 1 2 3 4 5 [✓ 6] 7

4. Be certain to circle a number for each attribute for each job activity. Also be certain that you have checked appropriately the background information sheet at the front of the survey booklet.

5. Attributes that are not clear to you, may be looked up in the Attribute Definition Booklet. Each number preceding each attribute on the rating sheet corresponds to its respective number in the Definition Booklet. Return your Definition Booklet and survey forms with your name (optional) and organization written on the cover.

6. Thank you very much for your cooperation and assistance.

7.

Statement of Confidentiality

The Center for Vocational Education wishes to reaffirm its previous commitment to complete confidentiality. The published data will not be associated with any individual or agency.

Job Activity-by-Attribute Survey

Occupation: General Secretary

Job Activity: Place outgoing calls.

Note: Use one job activity statement per page. Job activity statements follow.

Rating Scale
To perform this job activity, demonstration of this attribute is

0 Not required
1 Required to a very minimal degree
2 Required to a minimal degree
3 Required to a low moderate degree
4 Required to a moderate degree
5 Required to a high moderate degree
6 Required to a high degree
7 Required to a very high degree

ATTRIBUTES	RATING
A. Cognitive Attribute	
1. Closure	0 1 2 3 4 5 6 7
2. Form perception	0 1 2 3 4 5 6 7
3. Perceptual speed	0 1 2 3 4 5 6 7
4. Spatial scanning	0 1 2 3 4 5 6 7
5. Spatial orientation	0 1 2 3 4 5 6 7
6. Visualization	0 1 2 3 4 5 6 7
7. Number facility	0 1 2 3 4 5 6 7
8. Memory	0 1 2 3 4 5 6 7
9. Verbal comprehension	0 1 2 3 4 5 6 7
10. Grammar	0 1 2 3 4 5 6 7
11. Spelling	0 1 2 3 4 5 6 7
12. Expressional fluency	0 1 2 3 4 5 6 7
13. Ideational fluency	0 1 2 3 4 5 6 7
14. Sensitivity to problems	0 1 2 3 4 5 6 7
15. Deductive reasoning	0 1 2 3 4 5 6 7
16. Inductive reasoning	0 1 2 3 4 5 6 7
17. Originality	0 1 2 3 4 5 6 7
18. Social intelligence	0 1 2 3 4 5 6 7
19. Aesthetic judgment	0 1 2 3 4 5 6 7
20. Musical aptitude	0 1 2 3 4 5 6 7
B. Psychomotor Attributes	
21. Control precision	0 1 2 3 4 5 6 7
22. Multilimb coordination	0 1 2 3 4 5 6 7
23. Reaction time	0 1 2 3 4 5 6 7
24. Eye-hand coordination	0 1 2 3 4 5 6 7
25. Manual dexterity	0 1 2 3 4 5 6 7
26. Finger dexterity	0 1 2 3 4 5 6 7
27. Arm-hand steadiness	0 1 2 3 4 5 6 7
28. Explosive strength	0 1 2 3 4 5 6 7
29. Static strength	0 1 2 3 4 5 6 7
30. Dynamic strength	0 1 2 3 4 5 6 7
31. Body equilibrium	0 1 2 3 4 5 6 7
32. Stamina	0 1 2 3 4 5 6 7
C. Sensory Capacity Attributes	
33. Near visual acuity	0 1 2 3 4 5 6 7
34. Far visual acuity	0 1 2 3 4 5 6 7
35. Depth perception	0 1 2 3 4 5 6 7
36. Color discrimination	0 1 2 3 4 5 6 7
37. Auditory acuity	0 1 2 3 4 5 6 7
38. Tactual discrimination	0 1 2 3 4 5 6 7

JOB ACTIVITY-BY-ATTRIBUTE SURVEY

OCCUPATION: SECRETARY

JOB ACTIVITY STATEMENTS

1. Read and route incoming mail.
2. Locate and attach appropriate file to correspondence to be answered by employer.
3. Take dictation in shorthand or on stenotype machine.
4. Transcribe notes on typewriter or transcribe from voice recordings.
5. Compose routine correspondence.
6. Type routine correspondence.
7. File correspondence and other records.
8. Answer telephone and give information to callers.
9. Route calls to appropriate officials.
10. Place outgoing calls.
11. Schedule appointments for employer.
12. Greet visitors, ascertain nature of business, and conduct visitors to employer or appropriate person.
13. Take dictation.
14. Arrange travel schedule and reservations.
15. Compile and type statistical reports.
16. Supervise clerical workers.
17. Keep personnel records.
18. Record minutes of staff meetings.

JOB ACTIVITY-BY-ATTRIBUTE SURVEY

Automotive Mechanics

THE CENTER FOR VOCATIONAL EDUCATION
THE OHIO STATE UNIVERSITY
1960 Kenny Road Columbus, Ohio 43210

Job Activity - by - Attribute Survey

Purpose of Study

As a knowledgeable and skilled worker or supervisor in one of the occupations--automotive mechanic, business data programmer, or general secretary, you have been selected to provide information for an important study* at The Center for Vocational Education, The Ohio State University. Your responses to this survey form along with those of other workers and supervisors will contribute to the development of a manual and a guide for providing needed information for counselors, teachers, or employers to assist individuals who are determining their occupational plans or anticipating employment requirements and preparation.

Your participation in this study involves your providing us with your best judgment regarding 38 human characteristics or attributes related to specific job activities identified for your occupation. You are asked to respond to this survey form by circling one of the numbers (0, 1, 2, 3, 4, 5, 6, or 7 of the rating scale defined at the top of the rating sheet) opposite each of the 38 attributes for each job activity.

You have also been provided a booklet of definitions of the human attributes (characteristics) which are numbered to correspond with each of the attributes on the rating sheet. You may refer to any of the definitions you wish as you circle answers.

The project staff sincerely thanks you for your important contribution to this study.

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*The study is sponsored through a grant of the U.S. Office of Education.

BACKGROUND INFORMATION

CHECK YOUR PRESENT JOB TITLE:

Automotive mechanic apprentice ☐
Automotive mechanic ☐
Service advisor or writer ☐
OTHER (specify) ____________________

Job specialist ☐
Service manager ☐
Garage owner ☐

CHECK THE TYPE OF BUSINESS IN WHICH YOU PRESENTLY WORK:

New car dealer ☐
Independent garage ☐

Service station ☐
OTHER (Specify) ______________

---

1. How many years have you worked at your present job? ____________
2. How many years have you worked as an Automotive Mechanic? ____________
3. How many other Automotive Mechanics do you work with in performing your duties? ______
4. To how many others are you responsible? __________

WHERE DID YOU RECEIVE YOUR TRAINING IN AUTOMOTIVE MECHANICS?

(Check one or more)

On-the-job (self-learned) ☐
Military training school ☐
Private automotive mechanic school ☐
Company trained programs ☐
OTHER (Specify) ____________________

Apprenticeship program ☐
High school program ☐
Post-high school program ☐
Adult education program ☐
Military experiences ☐

Directions for Marking Rating Sheets

1. Read the rating scale (0-7) at the top right-hand corner of your rating sheet. This rating scale is used for each of your responses.

2. Read the job activity statement for the stated occupation in the upper left-hand corner of the survey rating sheet.

3. For each job activity, there are 38 human characteristics or attributes listed with the set of numbers 0 to 7 following each. You are to rate the degree to which demonstration of this attribute is required to perform a given job activity by circling one of the appropriate numbers (0, 1, 2, 3, 4, 5, 6, or 7) following each attribute. It is very important that you circle only one number for each attribute.

   NOTE: The 0-7 Scale provides you with eight levels of degrees to which demonstration of an attribute is required to perform a respective job activity. 0 designates not required and 7 designates that demonstration of this attribute is required to a very high degree. The numbers 1, 2, 3, 4, 5, and 6 provide levels of degrees to which demonstration of an attribute is required to perform a respective job activity between the two extremes 0 and 7.

EXAMPLE

Occupation:

Automotive Mechanic

Job Activity:

Steam clean car engine.

Rating Scale
To perform this job activity, demonstration of this attribute is

0 Not required
1 Required to a very minimal degree
2 Required to a minimal degree
3 Required to a low moderate degree
4 Required to a moderate degree
5 Required to a high moderate degree
6 Required to a high degree
7 Required to a very high degree

ATTRIBUTE	RATING
A. Cognitive Attributes	
1. Closure	0 1 [✓ 2] 3 4 5 6 7

4. Be certain to circle a number for each attribute for each job activity. Also be certain that you have checked appropriately the background information sheet at the front of the survey booklet.

5. Attributes that are not clear to you, may be looked up in the Attribute Definition Booklet. Each number preceding each attribute on the rating sheet corresponds to its respective number in the Definition Booklet. Return your Definition Booklet and survey forms with your name (optional) and organization written on the cover.

6. Thank you very much for your cooperation and assistance.

7.

Statement of Confidentiality

The Center for Vocational Education wishes to reaffirm its previous commitment to complete confidentiality. The published data will not be associated with any individual or agency.

Job Activity-by-Attribute Survey

Occupation: Automotive Mechanics

Job Activity: Solder leaks in radiator.

Note: Use one job activity statement per page. Job activity statements follow.

Rating Scale
To perform this job activity, demonstration of this attribute is

0 Not required
1 Required to a very minimal degree
2 Required to a minimal degree
3 Required to a low moderate degree
4 Required to a moderate degree
5 Required to a high moderate degree
6 Required to a high degree
7 Required to a very high degree

ATTRIBUTES	RATING
A. Cognitive Attribute	
1. Closure	0 1 2 3 4 5 6 7
2. Form perception	0 1 2 3 4 5 6 7
3. Perceptual speed	0 1 2 3 4 5 6 7
4. Spatial scanning	0 1 2 3 4 5 6 7
5. Spatial orientation	0 1 2 3 4 5 6 7
6. Visualization	0 1 2 3 4 5 6 7
7. Number facility	0 1 2 3 4 5 6 7
8. Memory	0 1 2 3 4 5 6 7
9. Verbal comprehension	0 1 2 3 4 5 6 7
10. Grammar	0 1 2 3 4 5 6 7
11. Spelling	0 1 2 3 4 5 6 7
12. Expressional fluency	0 1 2 3 4 5 6 7
13. Ideational fluency	0 1 2 3 4 5 6 7
14. Sensitivity to problems	0 1 2 3 4 5 6 7
15. Deductive reasoning	0 1 2 3 4 5 6 7
16. Inductive reasoning	0 1 2 3 4 5 6 7
17. Originality	0 1 2 3 4 5 6 7
18. Social intelligence	0 1 2 3 4 5 6 7
19. Aesthetic judgment	0 1 2 3 4 5 6 7
20. Musical aptitude	0 1 2 3 4 5 6 7
B. Psychomotor Attributes	
21. Control precision	0 1 2 3 4 5 6 7
22. Multilimb coordination	0 1 2 3 4 5 6 7
23. Reaction time	0 1 2 3 4 5 6 7
24. Eye-hand coordination	0 1 2 3 4 5 6 7
25. Manual dexterity	0 1 2 3 4 5 6 7
26. Finger dexterity	0 1 2 3 4 5 6 7
27. Arm-hand steadiness	0 1 2 3 4 5 6 7
28. Explosive strength	0 1 2 3 4 5 6 7
29. Static strength	0 1 2 3 4 5 6 7
30. Dynamic strength	0 1 2 3 4 5 6 7
31. Body equilibrium	0 1 2 3 4 5 6 7
32. Stamina	0 1 2 3 4 5 6 7
C. Sensory Capacity Attributes	
33. Near visual acuity	0 1 2 3 4 5 6 7
34. Far visual acuity	0 1 2 3 4 5 6 7
35. Depth perception	0 1 2 3 4 5 6 7
36. Color discrimination	0 1 2 3 4 5 6 7
37. Auditory acuity	0 1 2 3 4 5 6 7
38. Tactual discrimination	0 1 2 3 4 5 6 7

APPENDIX O

OCCUPATION-BY-ATTRIBUTE SURVEY INSTRUMENT FOR THE THREE OCCUPATIONS

Directions for Marking Rating Sheets

1. Read the rating scale (0-7) in the upper right-hand corner of the rating sheet. This rating scale is used for each of your responses.

2. Check the occupation shown in the upper left-hand corner of the rating sheet to be certain that it is the occupation with which you are familiar.

3. For each occupation there are 38 human characteristics or attributes listed with the set of numbers 0 to 7 following each. Rate the importance and need of each of the 38 human attributes to your occupation by circling one of the appropriate numbers (0, 1, 2, 3, 4, 5, 6, or 7) following each attribute. It is very important that you circle one number for each attribute.

NOTE: The 0-7 Scale provides you with eight levels or degrees to which demonstration of an attribute is required to perform a respective occupation. 0 designates that demonstration of this attribute is not required and 7 designates that demonstration of this attribute is required to a very high degree. The numbers 1, 2, 3, 4, 5, and 6 provide levels or degrees to which demonstration of an attribute is required to perform a respective occupation between the two extremes 0 and 7.

EXAMPLE

Occupation:

Automotive Mechanic

Rating Scale
To perform this job occupation demonstration of this attribute is

0 Not required
1 Required to a very minimal degree
2 Required to a minimal degree
3 Required to a low moderate degree
4 Required to a moderate degree
5 Required to a high moderate degree
6 Required to a high degree
7 Required to a very high degree

ATTRIBUTE	RATING
A. Cognitive Attributes	
1. Nonverbal Comprehension	0 1 2 [✓ 3] 4 5 6 7

4. Be certain to circle a number for each attribute for the occupation. Also be certain that you have checked appropriately the background information sheet at the front of the survey booklet.

5. Attributes that are not clear to you, may be looked up in the Attribute Definition Booklet. Each number preceding each attribute on the rating sheet corresponds to its respective number in the Definition Booklet. Return your Definition Booklet and survey forms with your name (optional) and organization written on the cover.

6. Thank you very much for your cooperation and assistance.

7.

Statement of Confidentiality

The Center for Vocational Education wishes to reaffirm its previous commitment to complete confidentiality. The published data will not be associated with any individual or agency.

Occupation-by-Attribute Survey

Occupation: Automotive Mechanic

Rating Scale
To perform this occupation, demonstration of this attribute is

0 Not required
1 Required to a very minimal degree
2 Required to a minimal degree
3 Required to a low moderate degree
4 Required to a moderate degree
5 Required to a high moderate degree
6 Required to a high degree
7 Required to a very high degree

ATTRIBUTES	RATING
A. Cognitive Attribute	
1. Closure	0 1 2 3 4 5 6 7
2. Form perception	0 1 2 3 4 5 6 7
3. Perceptual speed	0 1 2 3 4 5 6 7
4. Spatial scanning	0 1 2 3 4 5 6 7
5. Spatial orientation	0 1 2 3 4 5 6 7
6. Visualization	0 1 2 3 4 5 6 7
7. Number facility	0 1 2 3 4 5 6 7
8. Memory	0 1 2 3 4 5 6 7
9. Verbal comprehension	0 1 2 3 4 5 6 7
10. Grammar	0 1 2 3 4 5 6 7
11. Spelling	0 1 2 3 4 5 6 7
12. Expressional fluency	0 1 2 3 4 5 6 7
13. Ideational fluency	0 1 2 3 4 5 6 7
14. Sensitivity to problems	0 1 2 3 4 5 6 7
15. Deductive reasoning	0 1 2 3 4 5 6 7
16. Inductive reasoning	0 1 2 3 4 5 6 7
17. Originality	0 1 2 3 4 5 6 7
18. Social intelligence	0 1 2 3 4 5 6 7
19. Aesthetic judgment	0 1 2 3 4 5 6 7
20. Musical aptitude	0 1 2 3 4 5 6 7
B. Psychomotor Attributes	
21. Control precision	0 1 2 3 4 5 6 7
22. Multilimb coordination	0 1 2 3 4 5 6 7
23. Reaction time	0 1 2 3 4 5 6 7
24. Eye-hand coordination	0 1 2 3 4 5 6 7
25. Manual dexterity	0 1 2 3 4 5 6 7
26. Finger dexterity	0 1 2 3 4 5 6 7
27. Arm-hand steadiness	0 1 2 3 4 5 6 7
28. Explosive strength	0 1 2 3 4 5 6 7
29. Static strength	0 1 2 3 4 5 6 7
30. Dynamic strength	0 1 2 3 4 5 6 7
31. Body equilibrium	0 1 2 3 4 5 6 7
32. Stamina	0 1 2 3 4 5 6 7
C. Sensory Capacity Attributes	
33. Near visual acuity	0 1 2 3 4 5 6 7
34. Far visual acuity	0 1 2 3 4 5 6 7
35. Depth perception	0 1 2 3 4 5 6 7
36. Color discrimination	0 1 2 3 4 5 6 7
37. Auditory acuity	0 1 2 3 4 5 6 7
38. Tactual discrimination	0 1 2 3 4 5 6 7

Occupation-by-Attribute Survey

Occupation: **Business Data Programmer**

Rating Scale
To perform this occupation, demonstration of this attribute is

0 Not required
1 Required to a very minimal degree
2 Required to a minimal degree
3 Required to a low moderate degree
4 Required to a moderate degree
5 Required to a high moderate degree
6 Required to a high degree
7 Required to a very high degree

ATTRIBUTES		RATING
A.	Cognitive Attribute	
1.	Closure	0 1 2 3 4 5 6 7
2.	Form perception	0 1 2 3 4 5 6 7
3.	Perceptual speed	0 1 2 3 4 5 6 7
4.	Spatial scanning	0 1 2 3 4 5 6 7
5.	Spatial orientation	0 1 2 3 4 5 6 7
6.	Visualization	0 1 2 3 4 5 6 7
7.	Number facility	0 1 2 3 4 5 6 7
8.	Memory	0 1 2 3 4 5 6 7
9.	Verbal comprehension	0 1 2 3 4 5 6 7
10.	Grammar	0 1 2 3 4 5 6 7
11.	Spelling	0 1 2 3 4 5 6 7
12.	Expressional fluency	0 1 2 3 4 5 6 7
13.	Ideational fluency	0 1 2 3 4 5 6 7
14.	Sensitivity to problems	0 1 2 3 4 5 6 7
15.	Deductive reasoning	0 1 2 3 4 5 6 7
16.	Inductive reasoning	0 1 2 3 4 5 6 7
17.	Originality	0 1 2 3 4 5 6 7
18.	Social intelligence	0 1 2 3 4 5 6 7
19.	Aesthetic judgment	0 1 2 3 4 5 6 7
20.	Musical aptitude	0 1 2 3 4 5 6 7
B.	Psychomotor Attributes	
21.	Control precision	0 1 2 3 4 5 6 7
22.	Multilimb coordination	0 1 2 3 4 5 6 7
23.	Reaction time	0 1 2 3 4 5 6 7
24.	Eye-hand coordination	0 1 2 3 4 5 6 7

ATTRIBUTES		RATING
25.	Manual dexterity	0 1 2 3 4 5 6 7
26.	Finger dexterity	0 1 2 3 4 5 6 7
27.	Arm-hand steadiness	0 1 2 3 4 5 6 7
28.	Explosive strength	0 1 2 3 4 5 6 7
29.	Static strength	0 1 2 3 4 5 6 7
30.	Dynamic strength	0 1 2 3 4 5 6 7
31.	Body equilibrium	0 1 2 3 4 5 6 7
32.	Stamina	0 1 2 3 4 5 6 7
C.	Sensory Capacity Attributes	
33.	Near visual acuity	0 1 2 3 4 5 6 7
34.	Far visual acuity	0 1 2 3 4 5 6 7
35.	Depth perception	0 1 2 3 4 5 6 7
36.	Color discrimination	0 1 2 3 4 5 6 7
37.	Auditory acuity	0 1 2 3 4 5 6 7
38.	Tactual discrimination	0 1 2 3 4 5 6 7

Occupation-by-Attribute Survey

Occupation:

General Secretary

Rating Scale
To perform this occupation, demonstration of this attribute is

0 Not required
1 Required to a very minimal degree
2 Required to a minimal degree
3 Required to a low moderate degree
4 Required to a moderate degree
5 Required to a high moderate degree
6 Required to a high degree
7 Required to a very high degree

	ATTRIBUTES	RATING
A.	Cognitive Attribute	
1.	Closure	0 1 2 3 4 5 6 7
2.	Form perception	0 1 2 3 4 5 6 7
3.	Perceptual speed	0 1 2 3 4 5 6 7
4.	Spatial scanning	0 1 2 3 4 5 6 7
5.	Spatial orientation	0 1 2 3 4 5 6 7
6.	Visualization	0 1 2 3 4 5 6 7
7.	Number facility	0 1 2 3 4 5 6 7
8.	Memory	0 1 2 3 4 5 6 7
9.	Verbal comprehension	0 1 2 3 4 5 6 7
10.	Grammar	0 1 2 3 4 5 6 7
11.	Spelling	0 1 2 3 4 5 6 7
12.	Expressional fluency	0 1 2 3 4 5 6 7
13.	Ideational fluency	0 1 2 3 4 5 6 7
14.	Sensitivity to problems	0 1 2 3 4 5 6 7
15.	Deductive reasoning	0 1 2 3 4 5 6 7
16.	Inductive reasoning	0 1 2 3 4 5 6 7
17.	Originality	0 1 2 3 4 5 6 7
18.	Social intelligence	0 1 2 3 4 5 6 7
19.	Aesthetic judgment	0 1 2 3 4 5 6 7
20.	Musical aptitude	0 1 2 3 4 5 6 7
B.	Psychomotor Attributes	
21.	Control precision	0 1 2 3 4 5 6 7
22.	Multilimb coordination	0 1 2 3 4 5 6 7
23.	Reaction time	0 1 2 3 4 5 6 7
24.	Eye-hand coordination	0 1 2 3 4 5 6 7
25.	Manual dexterity	0 1 2 3 4 5 6 7
26.	Finger dexterity	0 1 2 3 4 5 6 7
27.	Arm-hand steadiness	0 1 2 3 4 5 6 7
28.	Explosive strength	0 1 2 3 4 5 6 7
29.	Static strength	0 1 2 3 4 5 6 7
30.	Dynamic strength	0 1 2 3 4 5 6 7
31.	Body equilibrium	0 1 2 3 4 5 6 7
32.	Stamina	0 1 2 3 4 5 6 7
C.	Sensory Capacity Attributes	
33.	Near visual acuity	0 1 2 3 4 5 6 7
34.	Far visual acuity	0 1 2 3 4 5 6 7
35.	Depth perception	0 1 2 3 4 5 6 7
36.	Color discrimination	0 1 2 3 4 5 6 7
37.	Auditory acuity	0 1 2 3 4 5 6 7
38.	Tactual discrimination	0 1 2 3 4 5 6 7

APPENDIX P

DEFINITIONS FOR HUMAN ATTRIBUTE REQUIREMENTS OF JOBS
(REVISED EDITION)

DEFINITIONS*

FOR

HUMAN ATTRIBUTE REQUIREMENTS OF JOBS

(Revised Edition)

Prepared for Use
in Data Collection for
Project Grant No. G007603970 "Relating the Capabilities
of the Handicapped to the Human Attribute Requirements
of Jobs"
under Development at
The Center for Vocational Education
The Ohio State University
Columbus, Ohio

November, 1977

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*Adapted from Attribute Requirement Inventory by Robert W. Neeb, J. W. Cunningham, and Thomas C. Tuttle, Center for Occupational Education, North Carolina State University at Raleigh, August, 1970, in cooperation with the United States Office of Education.

FOREWORD

In the Attribute Requirement Inventory (ARI) comprising 38 human attribute requirements of jobs are listed those characteristics or traits considered necessary and/or important to the worker's performance in a job or cluster of jobs. Human characteristics or attributes listed in the ARI [illegible] defined for the categories of cognitive, psychomotor, and sensory.

These human attribute/characteristic requirements of jobs are important to the guidance/vocational counselor and placement functions within educational institutions and places of employment. Application of these definitions to data collection for the project "Relating the Capabilities of the Handicapped to the Human Attribute Requirements of Jobs" will assist in the development of a guide to aid counselors or placement personnel in education and in employment to relate the potential capabilities of the handicapped student/individual to the human characteristic requirements of specific job duties or activities. In summary, it is expected that project products developed will aid counselors and placement officers significantly in providing handicapped individuals with additional data bases for making individual career decisions regarding planning individualized educational programs (IEP) and employment placement.

TABLE OF CONTENTS

A. Cognitive Attributes 1

B. Psychomotor Attributes 4

C. Sensory Capacity Attributes 5

A. COGNITIVE ATTRIBUTES

The qualities of knowing including both awareness and judgment involving perceiving, recognizing, remembering, conceiving, reasoning, thinking creatively, etc. A general characteristic of cognitive attributes is a relatively high state of consciousness or awareness of one's behavior.

Attribute	Attribute Definition	Examples of Attribute Activities
1. Closure	organize a disorganized or an obscure visual field into a single impression, with or without knowledge of any of the specific forms contained in the field.	examine structure/patterns using an instrument; inspect or investigate shapes/designs for background detail.
2. Form Perception	identify relevant details in objects or in graphic material; make fine visual comparisons; and discriminate among characteristics such as shapes and shadings of figures or objects and widths and lengths of lines.	paint designs on surfaces; compare finite objects for similarities and differences.
3. Perceptual Speed	rapidly identify details in verbal or tabular material and rapidly perform simple visual discrimination tasks; discriminate between symbols, detecting differences in copy, etc.	check a proof against the original copy; transpose information from printed matter into a machine.
4. Spatial Scanning	identify or detect objects quickly from a wide or complicated visual field.	look for objects on a large visual surface; identify quickly numbers ending in five in a table.
5. Spatial Orientation	identify area patterns and orient oneself in relation to the position and form of surrounding objects.	conduct a tour; drive an automobile.
6. Visualization	identify area patterns in two or three dimensions and convert them into other area patterns; demonstrate the ability to visualize objects of two or three dimensions; and analyze outlines in geometric forms.	use a mirror to visualize and manipulate objects; sketch designs for a pattern.
7. Number Facility	calculate numerical results rapidly and accurately using operations, such as addition, subtraction, multiplication, and division; count; plot on numbered coordinates; etc.	compute scale representations of objects; add and subtract debits and credits; compute the answer to an arithmetic problem.
8. Memory	reproduce/recall pertinent learned information perfectly within a specified period of time (one minute to eight hours).	give a speech from memory; remember dispatched addresses.
9. Verbal Comprehension	define the meanings of words and the ideas associated with them, and use them effectively; interpret language, identify relationships between words, and deduce meanings of whole sentences and paragraphs.	review written communication; prepare correspondence; write an article; prepare a presentation.

Attribute	Attribute Definition	Examples of Attribute Activities
10. Grammar	utilize forms and structures of words and their general arrangement in phrases and sentences.	check a manuscript; read printed material for accuracy/correctness.
11. Spelling	use letters properly to form words; distinguish between correctly spelled and misspelled words.	check typed material; read printed material for accuracy/correctness; prepare a paper.
12. Expressional Fluency	translate ideas into words rapidly, especially in oral or written exchange. Expressional fluency differs from ideational fluency (below) in that expressional fluency does not involve coming up with ideas (as does ideational fluency) but, rather, the verbal expression of these ideas.	question an individual; respond to questions rapidly; write a report.
13. Ideational Fluency	express creative ideas rapidly about a given topic where quantity rather than quality of ideas is stressed (for example, producing as many ideas as possible about a given topic in five minutes).	throw out ideas for consideration; give suggestions for a new mailing strategy; suggest style changes in products/goods.
14. Sensitivity to Problems	identify practical problems (for example, improvements that could be made in electrical appliances, etc.); deficiencies in courses of action or organizational plans (for example, why a road should not be repaved when it would have to be torn up in the near future to install new sewer pipes); or recognize implications of activities (for example, if the activity is building a dog house, the ability to infer that the entrance must be large enough to accommodate the dog, that the roof should be slanted so that rain will run off, that the entrance should be pointed away from the normal direction of the wind, etc.).	anticipate problems that could arise on a trip; investigate decreasing production of products/goods.
15. Deductive Reasoning	examine given premises and reason those premises to their necessary conclusion. For example, given: "All holidays are paid and no Sundays are paid," the ability to deduce that "No Sundays are holidays."	solve a complex problem; solve an arithmetic/mathematical problem.

Attribute	Attribute Definition	Examples of Attribute Activities
16. Inductive Reasoning	identify/express/write general concepts (giving structure and meaning to the information from given specific sets of information; that is, produce a general concept, principle, or rule to explain a set of specific instances. This factor is tested for by requiring the examinee to derive a principle from a number of particular instances. (For example, given the nonsense syllables ABC, MNO, XYZ, PQS, GHI, to discover that PQS is different from the others, since the rule for the formation of the others is alphabetical order). Note basic differences and relationships among symbols, figures, and figure patterns (usually measured through the use of figure diagrams arranged according to some principle).	decode a secret message; develop a theory to explain research findings
17. Originality	produce/express responses or ideas which are either clever or uncommon. For example, produce clever titles to story plots or produce novel consequences of a hypothetical situation (such as what if everyone went blind).	think of unusual names for products; produce a new title for a program; think of novel ways to make money.
18. Social Intelligence	identify/examine/interpret correctly behavioral information obtained through friendly interaction; identify the behavioral indicators of attention, thoughts, desires, moods, emotions, intentions, etc. (behavioral indicators include such behaviors as gestures, postures, actions, expressions, voice inflections, etc.).	work with senior citizens; vary selling approach according to customer reaction; supervise subordinates.
19. Aesthetic Judgment	analyze/determine the compositional organization of art objects on the basis of considering differences in unity, proportion, form, color, and design.	assess the quality of a design; determine the value of antique artifacts.
20. Musical Aptitude	combine sensory, psychomotor, and cognitive capabilities necessary to produce musical expression (with voice or instrument). These capacities include using the sense of pitch, rhythm, time, and tonal memory.	keep in tune/time with musical notes; play a melody on a musical instrument; sing a song in a choral group.

B. PSYCHOMOTOR ATTRIBUTES

Characteristics involving bodily or muscular movements, usually in coordination with the sensory processes.

Attribute	Attribute Definition	Examples of Attribute Activities
21. Control Precision	adjust the position of a control mechanism (such as joysticks, levers, pedals, rudders, etc.) using rapid, precise, controlled muscular movements.	place in position a building section; operate a lever to control movement of a vehicle.
22. Multilimb Coordination	use more than one limb (both hands, both feet, or hands and feet) simultaneously, in coordinated manner.	operate manual components of instruments; participate in (recreational activities) active sports
23. Reaction Time	respond rapidly to a stimulus when it appears.	correlate movements with time quickly; avoid a falling object.
24. Eye-Hand Coordination	make rapid and accurate hand movements in coordination with visual stimuli. This attribute is tested for by requiring the examinee to place dots in small circles as rapidly as possible.	assemble assorted designs into a construct; connect parts into an apparatus; lay a foundation.
25. Manual Dexterity	make rapid and accurate arm-hand movements in manipulating fairly large objects.	wrap packages; adjust appliances/apparatus; manipulate parts.
26. Finger Dexterity	manipulate precisely small objects with the fingers.	manipulate small/fine parts; assemble intricate parts.
27. Arm-Hand Steadiness	make precise arm-hand movements and maintain steadiness while making these movements, where strength and speed are unimportant. Also, minimize movement while the arms and hands are in a set position.	paint a design; fire at an object; transfer matter from one container to another container.
28. Explosive Strength	apply a maximum amount of muscular force through one or more short bursts of effort.	thrust objects with force; drive an object into the ground.
29. Static Strength	exert considerable force against external objects for a brief period, as in lifting, pushing, pulling, squeezing, carrying, etc.	transport materials from one place to another; unload goods from a conveyor.
30. Dynamic Strength	exert force repeatedly or continuously over time so as to move or support the body. Muscular endurance and resistance to muscular fatigue are important in this attribute.	emplace screws using hand tools; perform strenuous exercises.
31. Body Equilibrium	maintain or regain body balance and orientation when balance is threatened or temporarily lost, placing primary reliance on nonvisual cues (for example, sensory cues).	paint from a ladder; walk a straight line; climb a tree; walk across one end of a room to the other end.

Attribute	Attribute Definition	Examples of Attribute Activities
32. Stamina	exert the body through continuous effort over an extended period of time (heart endurance).	perform physical exertion for a prolonged/extended period of time.

C. SENSORY CAPACITY ATTRIBUTES

Characteristics involving the use of sense organs.

Attribute	Attribute Definition	Examples of Attribute Activities
33. Near Visual Acuity	identify and discriminate visual detail at normal reading distance or less.	proofread written materials; carve small objects; make a cut in a solid object.
34. Far Visual Acuity	identify/examine/specify details at distances beyond normal reading distance	search for materials in a maze from a distance; read house numbers from a distance (while moving materials from one place to another); watch for pedestrians.
35. Depth Perception	determine and discriminate distances such as those determined from the observer to an object, between objects along the observer's line of vision, from the front to the back of an object so that it is seen three dimensionally, etc.	move object with a large mechanical device; approach a car within a safe distance.
36. Color Discrimination	identify and distinguish color and similarities or differences among colors; identify harmonious or contrasting color combinations, or match colors adequately.	choose color schemes; mix shades of paint.
37. Auditory Acuity	identify relevant sound cues and discriminate between sounds in terms of their intensity, pitch, or tonal quality.	listen for different sounds; take messages over the telephone; tune instruments.
38. Tactual Discrimination	identify and discriminate among characteristics of objects (such as size, shape, texture, etc.) through the use of touch.	examine an object by feeling for defects; model a small artifact.

APPENDIX Q

STATISTICAL SCORES OF HUMAN ATTRIBUTES IN THE FIELD DATA ANALYSIS OF TWO INSTRUMENTS: OCCUPATION-BY-ATTRIBUTE AND JOB ACTIVITY-BY-ATTRIBUTE

STATISTICAL SCORES OF HUMAN ATTRIBUTES

Occupation: Business Data Programmer—Occupation by Attribute

Human Attributes		Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A.	**Cognitive Attribute**						
1.	Closure	1.75	2.36	.00	2.60	.59	6.80
2.	Form Perception	2.12	2.31	.00	2.18	.50	4.78
3.	Perceptual Speed	4.91	4.68	5.00	1.82	.41	3.33
4.	Spatial Scanning	4.80	4.10	5.00	2.23	.51	4.98
5.	Spatial Orientation	1.00	1.52	.00	1.71	.39	2.93
6.	Visualization	1.00	1.94	.00	2.24	.51	5.05
7.	Number Facility	5.91	5.68	6.00	1.33	.30	1.78
8.	Memory	4.62	4.78	4.00	1.75	.40	3.06
9.	Verbal Comprehension	5.81	5.63	6.00	1.11	.25	1.24
10.	Grammar	4.80	4.78	4.00	1.18	.27	1.39
11.	Spelling	4.87	5.00	4.00	1.15	.26	1.33
12.	Expressional Fluency	5.08	5.15	5.00	1.30	.29	1.69
13.	Ideational Fluency	4.60	4.63	4.00	1.38	.31	1.91
14.	Sensitivity to Problems	5.91	5.73	6.00	1.24	.28	1.53
15.	Deductive Reasoning	6.70	6.36	7.00	.95	.21	.91
16.	Inductive Reasoning	6.25	5.47	7.00	1.98	.45	3.93
17.	Originality	4.33	4.05	5.00	1.61	.37	2.60
18.	Social Intelligence	3.80	3.42	4.00	1.92	.44	3.70
19.	Aesthetic Judgment	1.60	1.57	.00	1.50	.34	2.25
20.	Musical Aptitude	.00	.00	.00	.00	.00	.00
B.	**Psychomotor Attribute**						
21.	Control Precision	.87	1.42	.00	1.67	.38	2.81
22.	Multilimb Coordination	.23	.89	.00	1.72	.39	2.98
23.	Reaction Time	.29	.89	.00	1.41	.32	1.98
24.	Eye-Hand Coordination	1.20	1.68	.00	1.82	.41	3.33
25.	Manual Dexterity	.45	1.10	.00	1.82	.41	3.32
26.	Finger Dexterity	.87	1.52	.00	1.89	.43	3.59
27.	Arm-Hand Steadiness	1.00	1.78	.00	2.04	.46	4.17
28.	Explosive Strength	.05	.10	.00	.31	.07	.09
29.	Static Strength	.29	.89	.00	1.37	.31	1.87
30.	Dynamic Strength	.13	.36	.00	.83	.19	.69
31.	Body Equilibrium	.60	1.42	.00	2.03	.46	4.14
32.	Stamina	.29	.94	.00	1.54	.35	2.38
C.	**Sensory Capacity Attribute**						
33.	Near Visual Acuity	5.75	5.26	6.00	1.93	.44	3.76
34.	Far Visual Acuity	1.00	1.10	.00	1.04	.24	1.09
35.	Depth Perception	.36	.52	.00	.69	.16	.48
36.	Color Discrimination	.36	.68	.00	1.00	.23	1.00
37.	Auditory Acuity	2.00	2.15	.00	2.06	.47	4.25
38.	Tactual Discrimination	.23	.47	.00	.96	.22	.93

STATISTICAL SCORES OF HUMAN ATTRIBUTES

Occupation: Automotive Mechanic–Occupation by Attribute

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	4.35	4.35	4.00	1.26	.28	1.60
2. Form Perception	4.66	4.80	4.00	1.28	.28	1.64
3. Perceptual Speed	4.10	4.05	4.00	1.63	.36	2.68
4. Spatial Scanning	4.00	4.10	3.00	1.48	.33	2.20
5. Spatial Orientation	4.50	4.55	6.00	1.46	.32	2.15
6. Visualization	4.00	4.00	3.00	1.48	.33	2.21
7. Number Facility	4.21	4.30	4.00	1.45	.32	2.11
8. Memory	5.16	5.20	5.00	1.32	.29	1.74
9. Verbal Comprehension	4.07	3.75	4.00	1.65	.36	2.72
10. Grammar	2.83	2.80	3.00	1.47	.32	2.16
11. Spelling	2.92	2.80	3.00	1.36	.30	1.85
12. Expressional Fluency	3.83	3.95	3.00	1.53	.34	2.36
13. Ideational Fluency	3.50	3.70	3.00	1.21	.27	1.48
14. Sensitivity to Problems	5.16	4.95	6.00	1.50	.33	2.26
15. Deductive Reasoning	5.25	5.10	6.00	1.33	.29	1.77
16. Inductive Reasoning	3.92	3.65	4.00	1.95	.43	3.81
17. Originality	2.50	2.30	3.00	1.55	.34	2.43
18. Social Intelligence	3.92	3.50	4.00	1.93	.43	3.73
19. Aesthetic Judgment	1.50	2.10	.00	1.88	.42	3.56
20. Musical Aptitude	.50	1.45	.00	1.82	.40	3.31
B. Psychomotor Attribute						
21. Control Precision	5.50	5.45	6.00	.99	.22	.99
22. Multilimb Coordination	5.33	5.50	5.00	1.19	.26	1.42
23. Reaction Time	5.30	5.25	6.00	1.16	.26	1.35
24. Eye-Hand Coordination	6.05	5.95	6.00	.94	.21	.89
25. Manual Dexterity	5.66	5.75	5.00	.91	.20	.82
26. Finger Dexterity	5.83	5.85	5.00	.93	.20	.87
27. Arm-Hand Steadiness	5.50	5.50	5.00	1.05	.23	1.10
28. Explosive Strength	4.75	4.70	4.00	1.62	.36	2.64
29. Static Strength	5.00	5.05	5.00	1.23	.27	1.52
30. Dynamic Strength	5.50	5.25	6.00	1.48	.33	2.19
31. Body Equilibrium	5.16	5.30	4.00	1.12	.25	1.27
32. Stamina	4.25	4.60	3.00	1.78	.40	3.20
C. Sensory Capacity Attribute						
33. Near Visual Acuity	5.16	5.25	5.00	1.20	.27	1.46
34. Far Visual Acuity	3.94	3.95	4.00	1.50	.33	2.26
35. Depth Perception	4.50	4.70	4.00	1.21	.27	1.48
36. Color Discrimination	3.92	3.70	4.00	2.00	.44	4.01
37. Auditory Acuity	5.10	5.15	5.00	1.18	.26	1.39
38. Tactual Discrimination	5.07	4.80	5.00	1.34	.30	1.81

STATISTICAL SCORES OF HUMAN ATTRIBUTES

Occupation: General Secretary–Occupation by Attribute

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	2.00	2.36	.00	2.36	.54	5.57
2. Form Perception	3.00	2.75	.00	2.33	.52	5.46
3. Perceptual Speed	5.83	5.60	6.00	1.31	.29	1.72
4. Spatial Scanning	4.25	3.70	5.00	2.00	.44	4.01
5. Spatial Orientation	2.50	2.80	1.00	1.82	.40	3.32
6. Visualization	5.91	2.15	.00	2.43	.55	1.00
7. Number Facility	4.00	3.80	4.00	1.64	.36	2.69
8. Memory	5.50	4.30	6.00	2.67	.59	7.16
9. Verbal Comprehension	6.66	6.05	7.00	1.76	.39	3.10
10. Grammar	6.78	6.45	7.00	1.19	.26	1.41
11. Spelling	6.83	6.45	7.00	1.27	.28	1.62
12. Expressional Fluency	6.00	5.25	7.00	2.12	.47	4.51
13. Ideational Fluency	4.07	4.00	4.00	1.94	.43	3.78
14. Sensitivity to Problems	4.50	4.35	7.00	2.25	.50	5.08
15. Deductive Reasoning	4.50	4.00	5.00	2.17	.48	4.73
16. Inductive Reasoning	2.50	2.75	.00	2.33	.52	5.46
17. Originality	3.75	3.60	4.00	2.16	.48	4.67
18. Social Intelligence	4.83	4.60	4.00	2.23	.49	4.98
19. Aesthetic Judgment	1.30	2.55	.00	2.66	.59	7.10
20. Musical Aptitude	.02	.15	.00	.67	.15	.95
B. Psychomotor Attribute						
21. Control Precision	1.50	2.35	.00	2.54	.56	6.45
22. Multilimb Coordination	3.50	3.45	3.00	2.39	.53	5.73
23. Reaction Time	4.00	3.90	4.00	2.40	.53	5.77
24. Eye-Hand Coordination	4.50	4.05	6.00	2.54	.56	6.47
25. Manual Dexterity	2.50	2.70	.00	2.43	.54	5.90
26. Finger Dexterity	2.50	3.55	7.00	2.87	.64	8.26
27. Arm-Hand Steadiness	3.16	3.45	6.00	2.30	.51	5.31
28. Explosive Strength	.21	.60	.00	1.09	.24	1.20
29. Static Strength	.50	1.25	.00	1.65	.36	2.72
30. Dynamic Strength	.40	.95	.00	1.43	.32	2.05
31. Body Equilibrium	3.00	2.65	.00	2.35	.50	5.08
32. Stamina	3.00	3.00	1.00	2.49	.57	6.22
C. Sensory Capacity Attribute						
33. Near Visual Acuity	6.00	5.60	7.00	1.50	.33	2.25
34. Far Visual Acuity	2.70	2.80	3.00	1.93	.43	3.74
35. Depth Perception	1.50	2.35	.00	.27	.50	5.18
36. Color Discrimination	1.50	1.80	.00	1.85	.41	3.43
37. Auditory Acuity	6.07	5.80	6.00	1.24	.27	1.53
38. Tactual Discrimination	.83	1.90	.00	2.31	.51	5.35

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Automotive Mechanics

Job Activity: Examine vehicle and discuss with customer or automobile-repair-service saleman, automobile tester, etc., nature and extent of damage or malfunction.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	3.90	3.60	4.00	2.18	.48	4.77
2. Form Perception	3.50	3.55	3.00	2.03	.45	4.15
3. Perceptual Speed	3.50	3.15	5.00	1.81	.40	3.29
4. Spatial Scanning	3.50	3.40	4.00	1.78	.40	3.20
5. Spatial Orientation	3.50	3.70	2.00	1.94	.43	3.80
6. Visualization	4.16	3.60	4.00	2.16	.48	4.67
7. Number Facility	4.33	4.30	4.00	1.78	.39	3.16
8. Memory	5.25	5.05	7.00	1.93	.43	3.73
9. Verbal Comprehension	4.83	5.05	4.00	1.23	.27	1.52
10. Grammar	4.50	4.45	2.00	1.76	.39	3.10
11. Spelling	4.00	4.15	4.00	1.63	.34	2.34
12. Expressional Fluency	5.50	4.90	6.00	1.65	.36	2.72
13. Ideational Fluency	3.75	3.85	3.00	1.98	.44	3.92
14. Sensitivity to Problems	5.10	4.70	5.00	1.92	.43	3.69
15. Deductive Reasoning	4.66	4.65	4.00	1.46	.32	2.13
16. Inductive Reasoning	3.83	3.50	4.00	1.82	.40	3.31
17. Originality	2.00	2.30	2.00	1.89	.42	3.58
18. Social Intelligence	3.50	3.55	3.00	1.95	.43	3.83
19. Aesthetic Judgment	2.00	2.25	.00	2.17	.48	4.72
20. Musical Aptitude	.40	1.60	.00	2.06	.46	4.25
B. Psychomotor Attribute						
21. Control Precision	4.25	4.25	3.00	1.83	.41	3.35
22. Multilimb Coordination	4.50	4.15	5.00	1.66	.37	2.76
23. Reaction Time	4.50	4.25	5.00	1.55	.34	2.40
24. Eye-Hand Coordination	4.20	4.30	4.00	1.21	.27	1.48
25. Manual Dexterity	3.50	3.50	3.00	1.05	23	1.10
26. Finger Dexterity	3.21	3.45	3.00	1.46	.32	2.15
27. Arm-Hand Steadiness	3.33	3.50	3.00	1.35	.30	1.84
28. Explosive Strength	2.10	2.15	2.00	1.59	.35	2.55
29. Static Strength	2.70	2.55	3.00	1.57	.35	2.47
30. Dynamic Strength	2.70	2.70	3.00	1.80	.40	3.27
31. Body Equilibrium	3.70	3.55	4.00	2.16	.48	4.68
32. Stamina	3.50	2.85	4.00	1.95	.43	3.81
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.92	4.90	5.00	1.07	.24	1.14
34. Far Visual Acuity	3.33	3.30	3.00	1.55	.34	2.43
35. Depth Perception	4.27	4.25	4.00	1.29	.28	1.67
36. Color Discrimination	3.16	3.00	1.00	1.91	.42	3.68
37. Auditory Acuity	4.83	4.85	4.00	1.66	.37	2.76
38. Tactual Discrimination	4.62	4.45	5.00	1.31	.29	1.73

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Automotive Mechanics

Job Activity: Plan work procedure, using charts, technical manuals, and experience.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	3.50	3.35	.00	2.20	.49	4.87
2. Form Perception	3.75	3.40	4.00	2.13	.47	4.56
3. Perceptual Speed	3.66	3.40	4.00	1.75	.39	3I09
4. Spatial Scanning	4.50	4.10	5.00	1.37	.30	1.88
5. Spatial Orientation	3.75	3.45	6.00	2.21	.49	4.89
6. Visualization	3.83	3.25	.00	2.51	.56	6.30
7. Number Facility	4.10	4.00	6.00	2.24	.50	5.05
8. Memory	5.50	5.00	6.00	1.91	.42	3.68
9. Verbal Comprehension	5.16	4.50	6.00	2.21	.49	4.89
10. Grammar	4.50	4.35	4.00	1.92	.43	3.71
11. Spelling	3.90	3.95	3.00	1.95	.43	3.83
12. Expressional Fluency	3.90	3.70	4.00	2.00	.44	4.01
13. Ideational Fluency	3.33	3.20	3.00	1.96	.43	3.85
14. Sensitivity to Problems	4.92	4.60	5.00	1.72	.38	2.98
15. Deductive Reasoning	4.92	4.80	5.00	1.36	.30	1.85
16. Inductive Reasoning	4.33	4.10	4.00	2.07	.46	4.30
17. Originality	3.50	3.30	5.00	2.08	.46	4.32
18. Social Intelligence	3.50	3.45	3.00	1.98	.44	3.94
19. Aesthetic Judgment	3.50	2.60	4.00	1.98	.44	3.93
20. Musical Aptitude	.33	1.25	.00	1.91	.42	3.67
B. Psychomotor Attribute						
21. Control Precision	2.10	2.40	.00	1.98	.44	3.93
22. Multilimb Coordination	2.33	2.80	2.00	1.96	.43	3.85
23. Reaction Time	2.50	2.45	.00	2.11	.47	4.47
24. Eye-Hand Coordination	2.50	2.70	2.00	1.97	.44	3.90
25. Manual Dexterity	2.50	2.45	4.00	1.70	.38	2.89
26. Finger Dexterity	3.00	2.70	4.00	1.89	.42	3.58
27. Arm-Hand Steadiness	2.70	2.65	3.00	1.84	.41	3.39
28. Explosive Strength	1.00	1.40	.00	1.53	.34	2.35
29. Static Strength	1.16	1.60	.00	1.60	.35	2.56
30. Dynamic Strength	1.10	1.65	.00	1.78	.39	3.18
31. Body Equilibrium	2.83	2.60	3.00	1.93	.43	3.72
32. Stamina	3.62	3.05	4.00	2.06	.46	4.26
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.70	4.45	5.00	1.63	.36	2.68
34. Far Visual Acuity	3.35	3.15	3.00	1.42	.31	2.02
35. Depth Perception	3.62	3.20	4.00	1.54	.34	2.37
36. Color Discrimination	1.50	2.45	.00	2.28	.51	5.20
37. Auditory Acuity	1.83	2.20	.00	1.93	.43	3.74
38. Tactual Discrimination	2.00	2.30	.00	1.97	.44	3.90

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Automotive Mechanics

Job Activity: Raise vehicle, using hydraulic jack or hoist, to gain access to mechanical units bolted to underside of vehicle.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	2.00	2.40	.00	2.25	.50	5.09
2. Form Perception	2.64	2.55	3.00	2.16	.48	4.68
3. Perceptual Speed	2.50	2.75	4.00	2.09	.46	4.40
4. Spatial Scanning	3.66	3.25	4.00	2.19	.49	4.82
5. Spatial Orientation	3.83	3.50	2.00	2.25	.50	5.10
6. Visualization	3.16	3.15	.00	2.25	.50	5.08
7. Number Facility	1.30	1.95	.00	2.06	.46	4.26
8. Memory	3.50	3.20	.00	2.41	.54	5.85
9. Verbal Comprehension	1.16	1.60	.00	1.98	.44	3.93
10. Grammar	.50	1.55	.00	2.03	.45	4.15
11. Spelling	.50	1.40	.00	1.75	.39	3.09
12. Expressional Fluency	.50	1.35	.00	1.75	.39	3.08
13. Ideational Fluency	.50	1.35	.00	1.72	.38	2.97
14. Sensitivity to Problems	3.00	3.00	4.00	2.31	.51	5.36
15. Deductive Reasoning	2.83	2.65	4.00	2.00	.44	4.02
16. Inductive Reasoning	2.00	2.35	.00	2.11	.47	4.45
17. Originality	.50	1.55	.00	2.03	.45	4.15
18. Social Intelligence	.50	1.75	.00	2.17	.48	4.72
19. Aesthetic Judgment	.40	1.20	.00	1.54	.34	2.37
20. Musical Aptitude	.21	.60	.00	1.14	.25	1.30
B. Psychomotor Attribute						
21. Control Precision	4.16	4.00	4.00	1.94	.43	3.78
22. Multilimb Coordination	4.10	3.85	4.00	2.05	.46	4.23
23. Reaction Time	4.25	4.15	7.00	2.32	.51	5.39
24. Eye-Hand Coordination	4.30	4.25	4.00	1.65	.36	2.72
25. Manual Dexterity	4.00	3.95	3.00	2.03	.45	4.15
26. Finger Dexterity	3.50	3.90	3.00	1.91	.42	3.67
27. Arm-Hand Steadiness	2.92	3.00	3.00	1.65	.37	2.73
28. Explosive Strength	3.50	2.90	4.00	1.86	.41	3.46
29. Static Strength	2.50	2.80	2.00	1.76	.39	3.11
30. Dynamic Strength	2.50	2.85	4.00	1.75	.39	3.08
31. Body Equilibrium	4.00	3.75	5.00	1.68	.37	2.82
32. Stamina	3.66	3.35	4.00	1.78	.39	3.18
C. Sensory Capacity Attribute						
33. Near Visual Acuity	3.94	3.80	4.00	1.54	.34	2.37
34. Far Visual Acuity	3.25	2.90	4.00	1.48	.33	2.20
35. Depth Perception	4.05	3.80	4.00	1.73	.38	3.01
36. Color Discrimination	1.30	1.85	.00	1.81	.40	3.29
37. Auditory Acuity	1.50	1.95	.00	1.84	.41	3.41
38. Tactual Discrimination	1.50	2.05	.00	1.84	.41	3.41

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Automotive Mechanics

Job Activity: Remove unit, such as engine, transmission, or differential, using wrenches and hoist.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	3.50	2.85	4.00	2.15	.48	4.66
2. Form Perception	3.50	3.25	.00	2.33	.52	5.46
3. Perceptual Speed	2.00	2.55	.00	2.50	.55	6.26
4. Spatial Scanning	3.50	3.10	.00	2.42	.54	5.88
5. Spatial Orientation	4.33	3.95	4.00	2.13	.47	4.57
6. Visualization	4.33	4.00	4.00	2.10	.47	4.42
7. Number Facility	2.50	2.40	.00	2.13	.47	4.56
8. Memory	4.70	4.20	5.00	2.30	.51	5.32
9. Verbal Comprehension	1.50	2.10	.00	1.97	.44	3.88
10. Grammar	1.00	1.60	.00	1.78	.40	3.20
11. Spelling	.83	1.25	.00	1.37	.30	1.88
12. Expressional Fluency	1.50	1.50	.00	1.43	.32	2.05
13. Ideational Fluency	1.75	1.85	.00	1.72	.38	2.97
14. Sensitivity to Problems	3.50	3.30	.00	2.38	.53	5.69
15. Deductive Reasoning	3.83	3.80	4.00	1.85	.41	3.43
16. Inductive Reasoning	2.70	2.60	.00	2.06	.46	4.25
17. Originality	1.00	1.60	.00	1.66	.37	2.77
18. Social Intelligence	.75	1.35	.00	1.66	.37	2.76
19. Aesthetic Judgment	1.50	1.55	.00	1.66	.37	2.78
20. Musical Aptitude	.21	.80	.00	1.39	.31	1.95
B. Psychomotor Attribute						
21. Control Precision	5.35	5.35	5.00	1.66	.37	2.76
22. Multilimb Coordination	5.16	5.35	5.00	1.18	.26	1.39
23. Reaction Time	5.25	5.35	5.00	1.26	.28	1.60
24. Eye-Hand Coordination	5.50	5.50	5.00	1.23	.27	1.52
25. Manual Dexterity	5.64	5.60	5.00	1.04	.23	1.09
26. Finger Dexterity	5.61	5.50	6.00	.88	.19	.78
27. Arm-Hand Steadiness	5.27	5.30	5.00	1.12	.25	1.27
28. Explosive Strength	5.50	5.35	5.00	1.42	.31	2.02
29. Static Strength	4.75	4.90	4.00	1.61	.36	2.62
30. Dynamic Strength	4.83	5.05	4.00	1.50	.33	2.26
31. Body Equilibrium	5.25	5.10	4.00	1.51	.34	2.30
32. Stamina	5.25	5.10	7.00	1.65	.36	2.72
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.90	4.75	4.00	1.61	.36	2.61
34. Far Visual Acuity	3.50	3.30	4.00	1.68	.37	2.85
35. Depth Perception	4.50	4.60	4.00	1.42	.32	2.04
36. Color Discrimination	2.25	2.25	3.00	1.77	.39	3.14
37. Auditory Acuity	2.00	2.10	1.00	1.68	.37	2.83
38. Tactual Discrimination	4.16	3.65	6.00	2.15	.48	4.66

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Automotive Mechanics

Job Activity: Disassemble unit, and inspect parts for wear using micrometers, caliper, and thickness gauges.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	4.33	4.30	4.00	1.59	.35	2.53
2. Form Perception	4.25	4.50	4.00	1.19	.26	1.42
3. Perceptual Speed	3.70	3.60	4.00	1.84	.41	3.41
4. Spatial Scanning	3.83	3.45	4.00	2.35	.52	5.52
5. Spatial Orientation	3.25	2.95	4.00	1.93	.43	3.73
6. Visualization	4.00	3.60	6.00	2.54	.56	6.46
7. Number Facility	5.21	4.70	5.00	2.36	.52	5.58
8. Memory	5.64	5.00	6.00	2.10	.47	4.42
9. Verbal Comprehension	2.75	2.65	.00	2.03	.45	4.13
10. Grammar	1.50	1.90	.00	2.12	.47	4.51
11. Spelling	1.50	1.70	.00	1.75	.39	3.06
12. Expressional Fluency	1.50	1.80	.00	1.82	.40	3.32
13. Ideational Fluency	1.50	1.90	.00	1.91	.42	3.67
14. Sensitivity to Problems	4.00	3.75	.00	2.38	.53	5.67
15. Deductive Reasoning	4.50	4.45	3.00	1.90	.42	3.62
16. Inductive Reasoning	3.10	3.35	3.00	2.23	.49	4.97
17. Originality	1.07	1.40	1.00	1.39	.31	1.93
18. Social Intelligence	.50	1.30	.00	1.78	.39	3.16
19. Aesthetic Judgment	1.00	1.55	.00	1.76	.39	3.10
20. Musical Aptitude	.26	1.00	.00	1.80	.40	3.26
B. Psychomotor Attribute						
21. Control Precision	5.37	5.65	5.00	1.13	.25	1.29
22. Multilimb Coordination	5.33	5.35	5.00	1.53	.34	2.34
23. Reaction Time	4.70	4.55	5.00	1.70	.38	2.89
24. Eye-Hand Coordination	5.83	5.65	7.00	1.34	.30	1.81
25. Manual Dexterity	5.70	5.60	7.00	1.18	.26	1.41
26. Finger Dexterity	5.70	5.65	7.00	1.13	.25	1.29
27. Arm-Hand Steadiness	5.64	5.40	6.00	1.27	.28	1.62
28. Explosive Strength	3.83	3.75	3.00	2.07	.46	4.30
29. Static Strength	3.50	3.70	3.00	2.17	.48	4.74
30. Dynamic Strength	3.50	3.50	3.00	2.01	.45	4.05
31. Body Equilibrium	4.10	4.30	4.00	1.65	.37	2.74
32. Stamina	3.50	3.60	3.00	2.03	.45	4.14
C. Sensory Capacity Attribute						
33. Near Visual Acuity	5.00	5.10	5.00	1.11	.25	1.25
34. Far Visual Acuity	3.50	3.25	4.00	1.61	.36	2.61
35. Depth Perception	4.07	4.15	4.00	1.89	.42	3.60
36. Color Discrimination	3.62	3.10	4.00	1.80	.40	3.25
37. Auditory Acuity	2.00	1.95	.00	1.82	.40	3.31
38. Tactual Discrimination	5.00	4.85	7.00	1.87	.41	3.50

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Automotive Mechanics

Job Activity: Repair parts such as pistons, rods, gears, valves, and bearings using mechanic's handtools.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	4.20	4.00	5.00	1.76	.40	3.11
2. Form Perception	4.41	4.05	4.00	1.95	.44	3.83
3. Perceptual Speed	3.33	3.21	1.00	2.07	.47	4.28
4. Spatial Scanning	3.87	3.47	4.00	2.17	.49	4.70
5. Spatial Orientation	3.12	3.10	.00	2.37	.54	5.65
6. Visualization	4.60	4.00	5.00	2.23	.51	5.00
7. Number Facility	4.71	4.10	5.00	2.10	.48	4.43
8. Memory	5.33	4.73	6.00	2.02	.46	4.09
9. Verbal Comprehension	2.33	2.63	1.00	1.97	.45	3.91
10. Grammar	1.00	1.52	1.00	1.61	.37	2.59
11. Spelling	1.00	1.42	1.00	1.61	.36	2.59
12. Expressional Fluency	1.20	1.73	.00	1.62	.37	2.64
13. Ideational Fluency	1.12	1.63	.00	1.64	.37	2.69
14. Sensitivity to Problems	3.75	3.21	.00	2.59	.59	6.73
15. Deductive Reasoning	4.12	4.00	3.00	2.08	.47	4.33
16. Inductive Reasoning	3.80	3.42	4.00	1.95	.44	3.81
17. Originality	1.00	1.68	1.00	1.85	.42	3.45
18. Social Intelligence	.45	1.05	.00	1.39	.32	1.94
19. Aesthetic Judgment	.66	1.42	.00	1.67	.38	2.81
20. Musical Aptitude	.23	1.00	.00	1.79	.41	3.22
B. Psychomotor Attribute						
21. Control Precision	5.20	5.00	5.00	.43	1.88	3.55
22. Multilimb Coordination	5.25	5.26	5.00	1.55	.35	2.42
23. Reaction Time	4.62	4.89	4.00	1.44	.33	2.09
24. Eye-Hand Coordination	5.87	5.52	7.00	1.46	.33	2.15
25. Manual Dexterity	5.91	5.68	6.00	1.33	.30	1.78
26. Finger Dexterity	6.00	5.78	6.00	1.27	.29	1.62
27. Arm-Hand Steadiness	5.40	5.42	5.00	1.26	.28	1.59
28. Explosive Strength	4.60	4.52	5.00	1.86	.42	3.48
29. Static Strength	4.41	4.73	4.00	1.82	.41	3.31
30. Dynamic Strength	4.42	4.68	4.00	1.73	.39	3.00
31. Body Equilibrium	4.28	4.63	4.00	1.42	.32	2.02
32. Stamina	4.42	4.77	4.00	1.54	.35	2.37
C. Sensory Capacity Attribute						
33. Near Visual Acuity	5.00	5.10	5.00	1.15	.26	1.32
34. Far Visual Acuity	3.22	3.2	3.00	1.27	.29	1.62
35. Depth Perception	4.43	4.57	4.00	1.50	.34	2.25
36. Color Discrimination	2.87	2.57	4.00	1.38	.31	1.92
37. Auditory Acuity	3.12	2.84	1.00	2.03	.46	4.14
38. Tactual Discrimination	4.41	4.31	4.00	1.85	.42	3.45

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Automotive Mechanics

Job Activity: Overhaul carburetors, blowers, generators, distributors, starters, and pumps.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	4.30	3.95	4.00	2.08	.46	4.36
2. Form Perception	4.10	3.95	4.00	2.11	.47	4.47
3. Perceptual Speed	4.00	3.80	4.00	2.11	.47	4.48
4. Spatial Scanning	4.16	4.00	4.00	2.17	.48	4.73
5. Spatial Orientation	3.83	3.45	4.00	2.13	.47	4.57
6. Visualization	4.30	4.00	4.00	2.17	.48	4.73
7. Number Facility	4.00	3.70	5.00	2.31	.51	5.37
8. Memory	5.16	4.70	7.00	2.25	.50	5.06
9. Verbal Comprehension	2.00	2.30	.00	1.97	.44	3.90
10. Grammar	1.00	1.60	.00	1.84	.41	3.41
11. Spelling	.50	1.50	.00	1.85	.41	3.42
12. Expressional Fluency	2.30	2.15	.00	1.69	.37	2.87
13. Ideational Fluency	1.00	1.55	.00	1.66	.37	2.78
14. Sensitivity to Problems	4.16	3.75	.00	2.57	.57	6.61
15. Deductive Reasoning	4.33	4.30	4.00	2.13	.47	4.53
16. Inductive Reasoning	3.90	3.35	4.00	2.23	.49	4.97
17. Originality	1.16	1.60	.00	1.66	.35	2.56
18. Social Intelligence	.50	1.25	.00	1.65	.36	2.72
19. Aesthetic Judgment	1.00	1.65	.00	1.78	.39	3.18
20. Musical Aptitude	.21	1.00	.00	1.83	.41	3.36
B. Psychomotor Attribute						
21. Control Precision	5.25	5.10	7.10	1.86	.41	3.46
22. Multilimb Coordination	5.00	5.25	4.00	1.20	.27	1.46
23. Reaction Time	5.00	4.80	4.00	1.82	.40	3.32
24. Eye-Hand Coordination	6.00	5.90	7.00	1.02	.22	1.04
25. Manual Dexterity	5.50	5.30	5.00	1.49	.33	2.22
26. Finger Dexterity	6.16	5.90	7.00	1.25	.28	1.56
27. Arm-Hand Steadiness	5.50	5.50	5.00	1.23	.27	1.52
28. Explosive Strength	3.83	3.55	4.00	1.90	.42	3.62
29. Static Strength	3.50	3.55	3.00	1.90	.42	3.62
30. Dynamic Strength	3.50	3.75	3.00	1.80	.40	3.25
31. Body Equilibrium	4.25	4.25	4.00	1.48	.33	2.19
32. Stamina	4.00	3.95	4.00	1.79	.40	3.20
C. Sensory Capacity Attribute						
33. Near Visual Acuity	5.38	5.60	5.00	1.31	.29	1.72
34. Far Visual Acuity	3.33	3.45	3.00	1.50	.33	2.26
35. Depth Perception	4.50	4.60	4.00	1.56	.35	2.46
36. Color Discrimination	3.00	2.80	4.00	1.47	.32	2.16
37. Auditory Acuity	3.00	3.00	2.00	1.77	.39	3.15
38. Tactual Discrimination	4.50	4.30	5.00	1.68	.37	2.85

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Automotive Mechanics

Job Activity: Replace carburetors, blowers, generators, distributors, starters, and pumps.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	3.50	2.80	4.00	1.93	.43	.374
2. Form Perception	3.83	3.45	4.00	1.76	.39	3.10
3. Perceptual Speed	3.16	3.05	.00	2.35	.52	5.52
4. Spatial Scanning	3.25	2.80	.00	2.06	.46	4.27
5. Spatial Orientation	3.50	3.15	5.00	2.20	.49	4.87
6. Visualization	2.83	2.85	.00	2.23	.49	4.97
7. Number Facility	3.25	3.05	4.00	2.08	.46	4.36
8. Memory	4.50	4.35	4.00	2.13	.47	4.55
9. Verbal Comprehension	2.16	2.20	.00	1.76	.39	3.11
10. Grammar	.83	1.55	.00	1.87	.42	3.52
11. Spelling	.50	1.30	.00	1.55	.34	2.43
12. Expressional Fluency	1.16	1.80	.00	1.96	.43	3.85
13. Ideational Fluency	1.16	1.75	.00	1.86	.41	3.46
14. Sensitivity to Problems	3.83	3.40	.00	2.52	.56	6.35
15. Deductive Reasoning	3.83	3.55	4.00	2.32	.52	5.41
16. Inductive Reasoning	2.50	2.45	.00	2.18	.48	4.78
17. Originality	1.00	1.45	.00	1.53	.34	2.36
18. Social Intelligence	.33	1.10	.00	1.51	.34	2.30
19. Aesthetic Judgment	.40	1.30	.00	1.65	.37	2.74
20. Musical Aptitude	.21	.70	.00	1.38	.30	1.90
B. Psychomotor Attribute						
21. Control Precision	5.00	4.70	5.00	1.86	.41	3.48
22. Multilimb Coordination	4.92	5.10	4.00	1.07	.24	1.14
23. Reaction Time	4.78	4.80	5.00	1.36	.30	1.85
24. Eye-Hand Coordination	5.16	5.15	5.00	1.26	.28	1.60
25. Manual Dexterity	5.62	5.35	6.00	1.18	.26	1.39
26. Finger Dexterity	5.50	5.50	5.00	1.13	.26	1.42
27. Arm-Hand Steadiness	5.16	5.25	6.00	1.33	.29	1.77
28. Explosive Strength	4.00	3.95	4.00	1.66	.37	2.78
29. Static Strength	3.75	4.00	3.00	1.74	.39	3.05
30. Dynamic Strength	4.00	4.05	4.00	1.66	.37	2.78
31. Body Equilibrium	4.35	4.55	4.00	1.35	.30	1.83
32. Stamina	4.10	4.35	3.00	1.63	.36	2.63
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.62	4.65	4.00	1.04	.23	1.08
34. Far Visual Acuity	3.00	3.05	3.00	1.19	.26	1.41
35. Depth Perception	4.16	4.15	4.00	1.42	.31	2.02
36. Color Discrimination	2.25	2.65	1.00	1.72	.38	2.97
37. Auditory Acuity	2.00	2.25	.00	2.12	.47	4.51
38. Tactual Discrimination	4.10	3.70	4.00	2.08	.46	4.32

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Automotive Mechanics

Job Activity: Rebuild parts, such as crankshafts and cylinders blocks, using lathes, shapers, drill presses, and welding equipment.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	4.25	3.77	4.00	2.15	.50	4.65
2. Form Perception	5.16	4.77	6.00	1.80	.42	3.24
3. Perceptual Speed	4.50	4.22	5.00	1.95	.46	3.83
4. Spatial Scanning	4.50	4.05	6.00	2.15	.50	4.64
5. Spatial Orientation	4.50	4.00	5.00	2.16	.51	4.70
6. Visualization	5.00	4.50	6.00	2.20	.51	4.85
7. Number Facility	5.00	4.55	6.00	2.17	.51	4.73
8. Memory	5.25	5.11	4.00	1.71	.40	2.92
9. Verbal Comprehension	3.00	2.83	5.00	2.00	.47	4.02
10. Grammar	1.83	2.11	.00	1.99	.47	3.98
11. Spelling	1.33	1.76	.00	1.82	.44	3.31
12. Expressional Fluency	2.16	2.44	1.00	1.82	.42	3.32
13. Ideational Fluency	1.50	2.22	.00	2.01	.47	4.06
14. Sensitivity to Problems	4.16	4.00	6.00	2.44	.57	6.00
15. Deductive Reasoning	4.50	4.55	4.00	2.14	.50	4.61
16. Inductive Reasoning	4.37	3.64	5.00	2.17	.52	4.74
17. Originality	2.50	2.22	.00	1.92	.45	3.71
18. Social Intelligence	.90	1.50	.00	1.68	.39	2.85
19. Aesthetic Judgment	2.00	1.94	.00	1.73	.40	2.99
20. Musical Aptitude	.25	1.11	.00	1.93	.45	3.75
B. Psychomotor Attribute						
21. Control Precision	6.60	6.11	7.00	1.13	.26	1.28
22. Multilimb Coordination	6.50	6.00	7.00	1.13	.26	1.29
23. Reaction Time	6.00	5.83	6.00	1.15	.27	1.32
24. Eye-Hand Coordination	5.83	5.77	7.00	1.21	.28	1.47
25. Manual Dexterity	6.08	5.89	7.00	1.15	.26	1.32
26. Finger Dexterity	6.20	5.94	7.00	1.17	.27	1.38
27. Arm-Hand Steadiness	6.00	5.73	7.00	1.32	.30	1.76
28. Explosive Strength	5.00	5.00	7.00	1.63	.37	2.66
29. Static Strength	4.41	4.89	4.00	1.66	.38	2.76
30. Dynamic Strength	4.75	5.05	4.00	1.50	.34	2.27
31. Body Equilibrium	5.60	5.42	6.00	1.34	.30	1.81
32. Stamina	5.00	5.10	7.00	1.59	.36	2.54
C. Sensory Capacity Attribute						
33. Near Visual Acuity	5.91	5.73	6.00	1.19	.27	1.42
34. Far Visual Acuity	3.62	3.84	3.00	1.34	.30	1.80
35. Depth Perception	5.08	5.10	5.00	1.41	.32	1.98
36. Color Discrimination	3.75	3.63	4.00	1.73	.39	3.02
37. Auditory Acuity	3.91	4.15	4.00	1.77	.40	3.14
38. Tactual Discrimination	5.12	4.63	2.00	1.89	.43	3.57

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Automotive Mechanics

Job Activity: Rewire ignition system, lights, and instrument panel.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	4.25	3.80	4.00	2.48	.55	6.16
2. Form Perception	4.50	4.65	4.00	1.92	.43	3.71
3. Perceptual Speed	4.00	4.00	4.00	1.89	.42	3.57
4. Spatial Scanning	4.30	3.85	4.00	2.47	.55	6.13
5. Spatial Orientation	4.25	3.65	5.00	2.27	.50	5.18
6. Visualization	4.35	4.45	4.00	2.08	.46	4.36
7. Number Facility	4.50	3.95	6.00	2.16	.48	4.68
8. Memory	5.30	4.85	7.00	2.23	.49	4.97
9. Verbal Comprehension	1.50	2.35	1.00	1.98	.44	3.92
10. Grammar	1.50	1.95	.00	2.06	.46	4.26
11. Spelling	1.50	1.90	.00	2.15	.48	4.62
12. Expressional Fluency	2.16	2.20	.00	1.90	.42	3.64
13. Ideational Fluency	1.00	1.75	.00	1.99	.44	3.98
14. Sensitivity to Problems	4.00	3.60	.00	2.60	.58	6.77
15. Deductive Reasoning	4.70	4.55	5.00	1.79	.40	3.20
16. Inductive Reasoning	3.66	3.15	4.00	2.11	.47	4.45
17. Originality	2.00	2.20	.00	2.26	.50	5.11
18. Social Intelligence	.33	1.10	.00	1.58	.35	2.51
19. Aesthetic Judgment	.50	1.75	.00	2.02	.45	4.09
20. Musical Aptitude	.21	1.00	.00	1.77	.39	3.15
B. Psychomotor Attribute						
21. Control Precision	5.00	4.60	5.00	2.11	.47	4.46
22. Multilimb Coordination	5.16	5.30	5.00	1.30	.29	1.69
23. Reaction Time	4.30	4.20	4.00	1.54	.34	2.37
24. Eye-Hand Coordination	5.50	5.55	7.00	1.19	.26	1.41
25. Manual Dexterity	5.10	5.25	4.00	1.29	.28	1.67
26. Finger Dexterity	6.10	5.75	7.00	1.29	.28	1.67
27. Arm-Hand Steadiness	5.25	5.30	4.00	1.30	.29	1.69
28. Explosive Strength	2.90	2.55	4.00	1.70	.38	2.89
29. Static Strength	3.00	2.65	3.00	1.63	.36	2.66
30. Dynamic Strength	3.50	3.10	4.00	1.77	.39	3.14
31. Body Equilibrium	4.75	4.45	6.00	1.84	.41	3.41
32. Stamina	3.90	4.00	3.00	1.83	.41	3.36
C. Sensory Capacity Attribute						
33. Near Visual Acuity	5.92	5.80	6.00	1.05	.23	1.11
34. Far Visual Acuity	3.50	3.40	4.00	1.35	.30	1.83
35. Depth Perception	4.10	4.20	4.00	1.39	.31	1.95
36. Color Discrimination	6.00	5.65	7.00	1.46	.32	2.13
37. Auditory Acuity	2.50	2.30	3.00	1.49	.33	2.22
38. Tactual Discrimination	4.25	3.95	5.00	2.13	.47	4.57

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Automotive Mechanics

Job Activity: Reline and adjust brakes.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	3.00	2.90	.00	2.22	.49	4.93
2. Form Perception	3.90	3.70	4.00	2.08	.46	4.32
3. Perceptual Speed	3.00	2.95	.00	2.18	.48	4.78
4. Spatial Scanning	3.50	2.95	.00	2.35	.52	5.52
5. Spatial Orientation	3.75	3.20	.00	2.23	.50	5.01
6. Visualization	3.33	3.60	3.00	2.30	.51	5.30
7. Number Facility	3.10	3.10	3.00	2.04	.45	4.16
8. Memory	4.50	4.20	5.00	2.04	.45	4.16
9. Verbal Comprehension	2.50	2.35	.00	1.87	.41	3.50
10. Grammar	1.50	1.70	.00	1.68	.37	2.85
11. Spelling	.50	1.20	.00	1.39	.31	1.95
12. Expressional Fluency	1.83	1.90	.00	1.71	.38	2.93
13. Ideational Fluency	1.00	1.50	.00	1.60	.35	2.57
14. Sensitivity to Problems	4.00	3.70	4.00	2.22	.49	4.95
15. Deductive Reasoning	4.16	3.95	4.00	2.32	.52	5.41
16. Inductive Reasoning	3.00	2.70	.00	1.27	.48	4.74
17. Originality	.50	1.40	.00	1.69	.38	2.88
18. Social Intelligence	.40	1.45	.00	1.93	.43	3.73
19. Aesthetic Judgment	.50	1.55	.00	1.90	.42	3.62
20. Musical Aptitude	.26	.90	.00	1.51	.34	2.30
B. Psychomotor Attribute						
21. Control Precision	4.75	4.35	5.00	2.13	.47	4.55
22. Multilimb Coordination	5.00	4.90	4.00	1.61	.36	2.62
23. Reaction Time	4.83	4.55	5.00	1.82	.40	3.31
24. Eye-Hand Coordination	4.92	5.00	5.00	1.37	.30	1.89
25. Manual Dexterity	5.30	5.15	6.00	1.18	.26	1.39
26. Finger Dexterity	5.21	5.20	5.00	1.19	.26	1.43
27. Arm-Hand Steadiness	5.00	5.10	4.00	1.33	.29	1.77
28. Explosive Strength	4.33	4.25	4.00	1.74	.39	3.03
29. Static Strength	4.30	3.95	5.00	1.39	.31	1.94
30. Dynamic Strength	4.16	4.20	4.00	1.50	.33	2.27
31. Body Equilibrium	4.61	4.20	5.00	1.47	.32	2.16
32. Stamina	4.07	3.95	4.00	1.39	.31	1.94
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.87	4.60	5.00	1.63	.36	2.67
34. Far Visual Acuity	2.92	3.05	3.00	1.76	.39	3.10
35. Depth Perception	3.92	3.75	4.00	1.65	.36	2.72
36. Color Discrimination	3.50	2.95	4.00	1.82	.40	3.31
37. Auditory Acuity	2.83	2.55	3.00	1.50	.33	2.26
38. Tactual Discrimination	3.75	3.50	2.00	1.96	.43	3.84

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Automotive Mechanics

Job Activity: Align front end.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	3.66	3.20	4.00	2.16	.48	4.69
2. Form Perception	3.78	3.35	4.00	2.18	.48	4.76
3. Perceptual Speed	3.83	3.40	4.00	2.32	.52	5.41
4. Spatial Scanning	4.10	3.45	.00	2.66	.59	7.10
5. Spatial Orientation	4.00	3.45	.00	2.43	.54	5.94
6. Visualization	4.10	3.65	4.00	2.36	.53	5.60
7. Number Facility	4.83	4.20	5.00	2.16	.48	4.69
8. Memory	4.90	4.55	5.00	2.03	.45	4.15
9. Verbal Comprehension	2.50	2.50	.00	2.11	.47	4.47
10. Grammar	1.50	1.70	3.00	1.41	.31	2.01
11. Spelling	.83	1.35	.00	1.56	.35	2.45
12. Expressional Fluency	1.25	1.80	.00	1.90	.42	3.64
13. Ideational Fluency	1.08	1.73	.00	1.88	.43	3.53
14. Sensitivity to Problems	4.50	3.60	.00	2.74	.61	7.51
15. Deductive Reasoning	4.33	4.15	4.00	2.08	.46	4.34
16. Inductive Reasoning	3.83	3.15	.00	2.39	.53	5.71
17. Originality	.70	1.35	.00	1.69	.37	2.87
18. Social Intelligence	.83	1.30	.00	1.45	.32	2.11
19. Aesthetic Judgment	.50	1.30	.00	1.59	.35	2.53
20. Musical Aptitude	.26	.80	.00	1.36	.30	1.85
B. Psychomotor Attribute						
21. Control Precision	5.00	4.70	6.00	1.89	.42	3.58
22. Multilimb Coordination	5.25	5.20	4.00	1.36	.30	1.85
23. Reaction Time	4.66	4.30	5.00	1.75	.39	3.06
24. Eye-Hand Coordination	5.16	5.15	5.00	1.22	.27	1.50
25. Manual Dexterity	5.25	5.20	4.00	1.19	.26	1.43
26. Finger Dexterity	4.50	4.60	4.00	1.14	.25	1.30
27. Arm-Hand Steadiness	4.78	4.65	5.00	1.56	.35	2.45
28. Explosive Strength	5.50	5.05	6.00	1.46	.32	2.15
29. Static Strength	4.50	4.60	4.00	1.60	.35	2.56
30. Dynamic Strength	4.83	4.90	4.00	1.55	.34	2.41
31. Body Equilibrium	5.00	4.70	3.00	1.92	.43	3.69
32. Stamina	4.50	4.70	4.00	1.68	.37	2.85
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.94	5.05	5.00	1.09	.24	1.20
34. Far Visual Acuity	3.75	4.00	3.00	1.74	.39	3.05
35. Depth Perception	4.75	4.80	4.00	1.54	.34	2.37
36. Color Discrimination	1.50	1.90	.00	1.65	.36	2.72
37. Auditory Acuity	2.00	1.95	3.00	1.57	.35	2.47
38. Tactual Discrimination	2.70	2.45	3.00	1.76	.39	3.10

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Automotive Mechanics

Job Activity: Repair or replace shock absorbers.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	2.50	2.20	.00	1.82	.40	3.32
2. Form Perception	3.16	2.65	4.00	1.98	.44	3.92
3. Perceptual Speed	2.75	2.50	.00	2.03	.45	4.15
4. Spatial Scanning	2.50	2.30	.00	2.08	.46	4.32
5. Spatial Orientation	3.50	2.60	4.00	2.13	.47	4.56
6. Visualization	3.00	2.60	.00	2.13	.47	4.56
7. Number Facility	1.90	2.15	.00	2.00	.44	4.02
8. Memory	3.25	3.15	.00	2.20	.49	4.87
9. Verbal Comprehension	1.50	1.65	.00	1.63	.36	2.66
10. Grammar	.50	1.05	.00	1.35	.30	1.83
11. Spelling	.26	.75	.00	1.11	.25	1.25
12. Expressional Fluency	.50	1.10	.00	1.58	.35	2.51
13. Ideational Fluency	.50	1.00	.00	1.21	.27	1.47
14. Sensitivity to Problems	2.50	2.80	.00	2.28	.51	5.22
15. Deductive Reasoning	2.75	2.75	.00	2.24	.50	5.03
16. Inductive Reasoning	1.83	1.90	.00	1.74	.39	3.04
17. Originality	.40	.95	.00	1.31	.29	1.73
18. Social Intelligence	.26	.75	.00	1.20	.27	1.46
19. Aesthetic Judgment	.40	1.05	.00	1.43	.32	2.05
20. Musical Aptitude	.16	.50	.00	1.00	.22	1.00
B. Psychomotor Attribute						
21. Control Precision	3.94	3.60	4.00	2.08	.46	4.35
22. Multilimb Coordination	4.25	4.50	4.00	1.39	.31	1.94
23. Reaction Time	3.50	3.75	3.00	1.71	.38	2.93
24. Eye-Hand Coordination	4.16	4.30	4.00	1.55	.34	2.43
25. Manual Dexterity	4.33	4.30	4.00	1.65	.37	2.74
26. Finger Dexterity	4.12	4.40	4.00	1.39	.31	1.93
27. Arm-Hand Steadiness	3.50	3.90	3.00	1.77	.39	3.14
28. Explosive Strength	4.10	4.15	4.00	1.84	.41	3.39
29. Static Strength	3.75	3.85	2.00	1.66	.37	2.76
30. Dynamic Strength	3.83	3.95	4.00	1.53	.34	2.36
31. Body Equilibrium	4.10	3.90	4.00	2.02	.45	4.09
32. Stamina	3.70	3.45	4.00	2.06	.46	4.26
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.00	4.00	4.00	1.07	.24	1.15
34. Far Visual Acuity	3.50	3.05	4.00	1.27	.28	1.62
35. Depth Perception	3.21	3.25	3.00	1.41	.31	1.98
36. Color Discrimination	1.75	1.60	3.00	1.27	.28	1.62
37. Auditory Acuity	1.21	1.55	1.00	1.35	.30	1.83
38. Tactual Discrimination	1.35	1.90	1.00	1.61	.36	2.62

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Automotive Mechanics

Job Activity: Solder leaks in radiator.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	2.83	2.45	.00	2.16	.48	4.68
2. Form Perception	2.90	2.55	.00	2.06	.46	4.26
3. Perceptual Speed	2.50	2.30	.00	2.02	.45	4.11
4. Spatial Scanning	4.95	2.30	.00	2.22	.49	2.16
5. Spatial Orientation	2.00	2.10	.00	2.15	.48	4.62
6. Visualization	3.00	2.75	.00	2.46	.55	6.09
7. Number Facility	1.25	1.55	.00	1.73	.38	2.99
8. Memory	2.70	2.55	.00	2.08	.46	4.36
9. Verbal Comprehension	1.00	1.35	.00	1.53	.34	2.34
10. Grammar	.40	1.10	.00	1.37	.30	1.88
11. Spelling	.40	.90	.00	1.11	.25	1.25
12. Expressional Fluency	.33	1.05	.00	1.39	.31	1.94
13. Ideational Fluency	.33	1.05	.00	1.43	.32	2.05
14. Sensitivity to Problems	2.50	2.55	1.00	1.90	.42	3.62
15. Deductive Reasoning	2.75	2.80	3.00	1.70	.38	2.90
16. Inductive Reasoning	2.00	1.95	.00	1.84	.41	3.41
17. Originality	.40	.95	.00	1.43	.32	2.05
18. Social Intelligence	.50	1.15	.00	1.46	.32	2.13
19. Aesthetic Judgment	1.00	1.30	.00	1.34	.30	1.80
20. Musical Aptitude	.16	.50	.00	1.00	.22	1.00
B. Psychomotor Attribute						
21. Control Precision	4.00	3.45	.00	2.54	.56	6.47
22. Multilimb Coordination	4.10	4.05	4.00	1.66	.37	2.78
23. Reaction Time	3.16	3.15	3.00	1.72	.38	2.97
24. Eye-Hand Coordination	4.66	4.55	5.00	1.60	.35	2.57
25. Manual Dexterity	4.50	4.60	4.00	1.69	.38	2.88
26. Finger Dexterity	4.50	4.50	4.00	1.67	.37	2.78
27. Arm-Hand Steadiness	5.16	5.00	5.00	1.71	.38	2.94
28. Explosive Strength	3.00	2.75	4.00	1.37	.30	1.88
29. Static Strength	2.90	2.85	3.00	1.30	.29	1.71
30. Dynamic Strength	2.70	2.75	2.00	1.33	.29	1.77
31. Body Equilibrium	3.90	3.75	4.00	1.25	.28	1.56
32. Stamina	3.66	3.30	4.00	1.55	.34	2.43
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.70	4.80	4.00	1.24	.27	1.53
34. Far Visual Acuity	3.00	3.05	2.00	1.63	.36	2.68
35. Depth Perception	3.92	3.80	4.00	1.73	.38	3.01
36. Color Discrimination	2.16	2.20	1.00	1.43	.32	2.06
37. Auditory Acuity	.83	1.35	.00	1.49	.33	2.23
38. Tactual Discrimination	3.25	2.80	4.00	1.85	.41	3.43

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Automotive Mechanics

Job Activity: Mend damaged body and fenders by hammering out or filling in dents and welding broken parts.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	4.37	3.78	6.00	2.37	.54	5.62
2. Form Perception	4.80	4.26	5.00	2.42	.55	5.87
3. Perceptual Speed	3.66	3.26	.00	2.40	.55	5.76
4. Spatial Scanning	4.00	3.52	6.00	2.24	.51	5.04
5. Spatial Orientation	3.25	3.10	.00	2.44	.56	5.98
6. Visualization	4.87	4.10	.00	2.53	.58	6.43
7. Number Facility	2.87	2.68	4.00	2.02	.46	4.11
8. Memory	3.80	3.42	4.00	2.36	.54	5.59
9. Verbal Comprehension	1.20	1.78	.00	1.78	.40	3.17
10. Grammar	.87	1.26	.00	1.36	.31	1.87
11. Spelling	.87	1.42	.00	1.71	.39	2.92
12. Expressional Fluency	.66	1.47	.00	1.83	.42	3.37
13. Ideational Fluency	1.00	1.73	.00	1.99	.45	3.98
14. Sensitivity to Problems	2.87	2.89	.00	2.18	.50	4.76
15. Deductive Reasoning	3.25	3.42	3.00	1.77	.40	3.14
16. Inductive Reasoning	2.66	2.57	.00	2.11	.48	4.48
17. Originality	1.33	2.26	.00	2.37	.54	5.64
18. Social Intelligence	.66	1.42	.00	1.74	.40	1.42
19. Aesthetic Judgment	2.25	2.63	.00	2.40	.55	5.80
20. Musical Aptitude	.23	.84	.00	1.38	.31	1.91
B. Psychomotor Attribute						
21. Control Precision	5.75	4.84	6.00	2.36	.54	5.58
22. Multilimb Coordination	5.85	5.57	6.00	1.30	.29	1.70
23. Reaction Time	4.60	4.31	5.00	1.91	.44	3.67
24. Eye-Hand Coordination	6.14	5.84	6.00	1.25	.28	1.58
25. Manual Dexterity	5.85	5.63	6.00	1.21	.27	1.46
26. Finger Dexterity	5.62	5.52	7.00	1.34	.30	1.81
27. Arm-Hand Steadiness	6.00	5.73	7.00	1.32	.30	1.76
28. Explosive Strength	4.87	4.89	4.00	1.62	.37	2.65
29. Static Strength	5.37	5.15	6.00	1.57	.36	2.47
30. Dynamic Strength	5.62	5.47	7.00	1.54	.35	2.37
31. Body Equilibrium	5.20	5.31	4.00	1.15	.26	1.33
32. Stamina	5.60	5.36	6.00	1.53	.35	2.35
C. Sensory Capacity Attribute						
33. Near Visual Acuity	5.75	5.52	6.00	1.26	.29	1.59
34. Far Visual Acuity	4.40	4.52	4.00	1.54	.35	2.37
35. Depth Perception	5.12	5.15	4.00	1.34	.30	1.80
36. Color Discrimination	5.75	5.15	6.00	1.80	.41	3.25
37. Auditory Acuity	1.91	2.10	2.00	1.62	.37	2.65
38. Tactual Discrimination	5.58	4.94	6.00	1.90	.43	3.60

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Automotive Mechanics

Job Activity: Mend damaged body and fenders by hammering out or filling in dents and welding broken parts.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	4.37	3.78	6.00	2.37	.54	5.62
2. Form Perception	4.80	4.26	5.00	2.42	.55	5.87
3. Perceptual Speed	3.66	3.26	.00	2.40	.55	5.76
4. Spatial Scanning	4.00	3.52	6.00	2.24	.51	5.04
5. Spatial Orientation	3.25	3.10	.00	2.44	.56	5.98
6. Visualization	4.87	4.10	.00	2.53	.58	6.43
7. Number Facility	2.87	2.68	4.00	2.02	.46	4.11
8. Memory	3.80	3.42	4.00	2.36	.54	5.59
9. Verbal Comprehension	1.20	1.78	.00	1.78	.40	3.17
10. Grammar	.87	1.26	.00	1.36	.31	1.87
11. Spelling	.87	1.42	.00	1.71	.39	2.92
12. Expressional Fluency	.66	1.47	.00	1.83	.42	3.37
13. Ideational Fluency	1.00	1.73	.00	1.99	.45	3.98
14. Sensitivity to Problems	2.87	2.89	.00	2.18	.50	4.76
15. Deductive Reasoning	3.25	3.42	3.00	1.77	.40	3.14
16. Inductive Reasoning	2.66	2.57	.00	2.11	.48	4.48
17. Originality	1.33	2.26	.00	2.37	.54	5.64
18. Social Intelligence	.66	1.42	.00	1.74	.40	1.42
19. Aesthetic Judgment	2.25	2.63	.00	2.40	.55	5.80
20. Musical Aptitude	.23	.84	.00	1.38	.31	1.91
B. Psychomotor Attribute						
21. Control Precision	5.75	4.84	6.00	2.36	.54	5.58
22. Multilimb Coordination	5.85	5.57	6.00	1.30	.29	1.70
23. Reaction Time	4.60	4.31	5.00	1.91	.44	3.67
24. Eye-Hand Coordination	6.14	5.84	6.00	1.25	.28	1.58
25. Manual Dexterity	5.85	5.63	6.00	1.21	.27	1.46
26. Finger Dexterity	5.62	5.52	7.00	1.34	.30	1.81
27. Arm-Hand Steadiness	6.00	5.73	7.00	1.32	.30	1.76
28. Explosive Strength	4.87	4.89	4.00	1.62	.37	2.65
29. Static Strength	5.37	5.15	6.00	1.57	.36	2.47
30. Dynamic Strength	5.62	5.47	7.00	1.54	.35	2.37
31. Body Equilibrium	5.20	5.31	4.00	1.15	.26	1.33
32. Stamina	5.60	5.36	6.00	1.53	.35	2.35
C. Sensory Capacity Attribute						
33. Near Visual Acuity	5.75	5.52	6.00	1.26	.29	1.59
34. Far Visual Acuity	4.40	4.52	4.00	1.54	.35	2.37
35. Depth Perception	5.12	5.15	4.00	1.34	.30	1.80
36. Color Discrimination	5.75	5.15	6.00	1.80	.41	3.25
37. Auditory Acuity	1.91	2.10	2.00	1.62	.37	2.65
38. Tactual Discrimination	5.58	4.94	6.00	1.90	.43	3.60

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Automotive Mechanics

Job Activity: Replace and adjust headlights.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	2.50	2.30	3.00	1.55	.34	2.43
2. Form Perception	2.16	2.15	.00	1.78	.39	3.18
3. Perceptual Speed	2.00	2.20	4.00	1.73	.38	3.01
4. Spatial Scanning	2.83	2.40	.00	2.08	.46	4.35
5. Spatial Orientation	2.50	2.45	.00	2.59	.50	5.10
6. Visualization	2.50	2.65	.00	2.34	.52	5.50
7. Number Facility	2.16	2.30	.00	2.13	.47	4.53
8. Memory	3.30	3.05	4.00	1.93	.43	3.73
9. Verbal Comprehension	1.50	1.65	.00	1.53	.34	2.34
10. Grammar	.75	1.20	.00	1.39	.31	1.95
11. Spelling	.75	1.20	.00	1.39	.31	1.95
12. Expressional Fluency	.87	1.47	.00	1.77	.40	3.15
13. Ideational Fluency	.70	1.20	.00	1.43	.32	2.06
14. Sensitivity to Problems	2.00	2.30	1.00	1.94	.43	3.80
15. Deductive Reasoning	2.25	2.50	1.00	1.96	.43	3.84
16. Inductive Reasoning	1.25	1.70	.00	1.75	.39	3.06
17. Originality	.33	1.00	.00	1.48	.33	2.21
18. Social Intelligence	.40	1.15	.00	1.49	.33	2.23
19. Aesthetic Judgment	.21	.95	.00	1.60	.35	2.57
20. Musical Aptitude	.21	.75	.00	1.33	.29	1.77
B. Psychomotor Attribute						
21. Control Precision	3.70	3.50	4.00	1.93	.43	3.73
22. Multilimb Coordination	3.25	3.50	3.00	1.23	.27	1.52
23. Reaction Time	2.75	2.90	1.00	1.77	.39	3.14
24. Eye-Hand Coordination	4.12	4.25	4.00	1.33	.29	1.77
25. Manual Dexterity	4.10	4.35	4.00	1.30	.29	1.71
26. Finger Dexterity	4.38	4.60	4.00	1.23	.27	1.51
27. Arm-Hand Steadiness	4.05	4.05	4.00	1.31	.29	1.73
28. Explosive Strength	2.50	2.20	3.00	1.36	.30	1.85
29. Static Strength	2.16	2.20	2.00	1.43	.32	2.06
30. Dynamic Strength	2.50	2.35	3.00	1.81	.40	3.29
31. Body Equilibrium	3.50	3.20	4.00	1.82	.40	3.32
32. Stamina	2.83	2.70	3.00	1.59	.35	2.53
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.35	4.50	4.00	1.31	.29	1.73
34. Far Visual Acuity	3.16	3.00	4.00	1.74	.39	3.05
35. Depth Perception	3.90	3.80	4.00	1.85	.41	3.43
36. Color Discrimination	1.30	1.70	.00	1.65	.37	2.74
37. Auditory Acuity	.70	1.25	.00	1.51	.33	2.30
38. Tactual Discrimination	1.50	1.70	.00	1.62	.36	2.64

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Automotive Mechanics

Job Activity: Install accessories, such as radios, heaters, mirrors, and windshield wipers.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	3.50	3.00	.00	2.29	.51	5.26
2. Form Perception	3.50	3.15	.00	2.54	.56	6.45
3. Perceptual Speed	3.50	3.10	.00	2.33	.52	5.46
4. Spatial Scanning	4.16	3.35	.00	2.66	.59	7.08
5. Spatial Orientation	4.00	3.40	.00	2.39	.53	5.72
6. Visualization	4.00	3.70	.00	2.51	.46	6.32
7. Number Facility	2.90	2.90	3.00	2.04	.45	4.20
8. Memory	4.25	3.85	5.00	.45	2.03	4.13
9. Verbal Comprehension	2.25	2.20	.00	1.76	.39	3.11
10. Grammar	1.83	2.00	.00	1.89	.42	3.57
11. Spelling	1.50	1.90	.00	1.88	.42	3.56
12. Expressional Fluency	1.16	1.80	.00	1.93	.43	3.74
13. Ideational Fluency	1.16	1.85	.00	2.03	.45	4.13
14. Sensitivity to Problems	3.50	3.20	.00	2.26	.50	5.11
15. Deductive Reasoning	4.00	3.80	2.00	2.26	.50	5.11
16. Inductive Reasoning	2.50	2.55	.00	2.30	.51	5.31
17. Originality	.50	2.05	.00	2.28	.51	5.20
18. Social Intelligence	1.50	1.70	.00	1.80	.40	3.27
19. Aesthetic Judgment	1.50	1.95	.00	2.16	.48	4.68
20. Musical Aptitude	.33	1.40	.00	1.95	.43	3.83
B. Psychomotor Attribute						
21. Control Precision	4.25	4.10	4.00	1.91	.42	3.67
22. Multilimb Coordination	4.27	4.50	4.00	1.14	.25	1.31
23. Reaction Time	3.50	3.50	3.00	1.70	.38	2.89
24. Eye-Hand Coordination	4.66	4.85	4.00	1.34	.30	1.81
25. Manual Dexterity	4.90	5.05	4.00	1.19	.26	1.41
26. Finger Dexterity	5.64	5.40	6.00	1.23	.27	1.51
27. Arm-Hand Steadiness	5.07	5.05	5.00	1.50	.33	2.26
28. Explosive Strength	3.00	2.85	3.00	1.38	.31	1.92
29. Static Strength	3.25	2.95	4.00	1.57	.35	2.47
30. Dynamic Strength	3.16	2.90	3.00	1.80	.40	3.25
31. Body Equilibrium	3.92	3.80	4.00	1.60	.36	2.58
32. Stamina	3.21	3.20	3.00	1.96	.43	3.85
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.92	5.15	4.00	1.13	.25	1.29
34. Far Visual Acuity	3.75	3.50	4.00	1.53	.34	2.36
35. Depth Perception	4.37	4.40	4.00	1.39	.31	1.93
36. Color Discrimination	4.10	3.80	4.00	2.28	.51	5.22
37. Auditory Acuity	3.16	3.10	4.00	2.10	.47	4.41
38. Tactual Discrimination	3.16	3.30	5.00	2.36	.52	5.58

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Business Data Programmer

Job Activity: Analyze all or part of workflow chart or diagram representing business problem by applying knowledge of computer capabilities, subject matter, algebra, and symbolic logic to develop sequence of program steps.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	2.50	2.65	.00	2.45	.54	6.02
2. Form Perception	2.00	2.35	.00	2.11	.47	4.45
3. Perceptual Speed	4.16	3.80	4.00	1.96	.43	3.85
4. Spatial Scanning	3.25	2.95	1.00	2.01	.45	4.05
5. Spatial Orientation	.83	1.60	.00	2.06	.46	4.25
6. Visualization	1.83	2.35	.00	2.39	.53	5.71
7. Number Facility	5.50	5.00	7.00	2.00	.44	4.00
8. Memory	4.75	4.50	7.00	2.08	.46	4.36
9. Verbal Comprehension	4.94	4.95	5.00	1.57	.35	2.47
10. Grammar	3.16	3.05	2.00	1.76	.39	3.10
11. Spelling	3.00	2.85	4.00	2.05	.46	4.23
12. Expressional Fluency	3.50	3.05	4.00	2.13	.47	4.57
13. Ideational Fluency	3.50	3.25	.00	2.44	.54	5.98
14. Sensitivity to Problems	5.10	4.75	5.00	2.12	.47	4.51
15. Deductive Reasoning	6.50	6.00	7.00	1.17	.26	1.36
16. Inductive Reasoning	5.90	5.30	7.00	2.08	.46	4.32
17. Originality	3.50	3.35	3.00	1.75	.39	3.08
18. Social Intelligence	1.00	1.60	.00	1.95	.43	3.83
19. Aesthetic Judgment	.66	1.00	.00	1.17	.26	1.36
20. Musical Aptitude	.02	.05	.00	.22	.05	.05
B. Psychomotor Attribute						
21. Control Precision	.16	.25	.00	.44	.09	.19
22. Multilimb Coordination	.16	.55	.00	1.23	.27	1.52
23. Reaction Time	.12	.70	.00	1.62	.36	2.64
24. Eye-Hand Coordination	.50	1.35	.00	1.84	.41	3.39
25. Manual Dexterity	.26	.55	.00	.88	.19	.78
26. Finger Dexterity	.26	.75	.00	1.44	.32	2.09
27. Arm-Hand Steadiness	.40	1.15	.00	1.69	.37	2.87
28. Explosive Strength	.02	.05	.00	.22	.05	.05
29. Static Strength	.05	.20	.00	.61	.13	.37
30. Dynamic Strength	.05	.10	.00	.30	.06	.09
31. Body Equilibrium	.26	.85	.00	1.38	.31	1.92
32. Stamina	.21	.60	.00	1.39	.31	1.93
C. Sensory Capacity Attribute						
33. Near Visual Acuity	5.00	4.90	4.00	2.02	.45	4.09
34. Far Visual Acuity	.40	1.15	.00	.41	1.87	3.50
35. Depth Perception	.26	.80	.00	1.67	.37	2.80
36. Color Discrimination	.26	.65	.00	1.08	.24	1.18
37. Auditory Acuity	.21	.70	.00	1.30	.29	1.69
38. Tactual Discrimination	.16	.50	.00	1.35	.30	1.84

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Business Data Programmer

Job Activity: Confer with supervisor and representative of departments affected by program to resolve questions of program intent, output requirements, input data acquisition, extent of automatic programming and coding use and modification, and inclusion of internal checks and controls.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	1.16	1.85	.00	2.20	.49	4.87
2. Form Perception	1.50	1.80	.00	1.96	.43	3.85
3. Perceptual Speed	4.00	3.25	4.00	2.14	.48	4.61
4. Spatial Scanning	2.50	2.45	.00	2.11	.47	4.47
5. Spatial Orientation	.40	.85	.00	1.26	.28	1.60
6. Visualization	1.83	2.25	.00	2.26	.50	5.14
7. Number Facility	4.75	4.50	4.00	1.96	.43	3.84
8. Memory	4.83	4.85	4.00	2.00	.44	4.02
9. Verbal Comprehension	5.95	5.95	6.00	.68	.15	.47
10. Grammar	5.25	4.75	6.00	1.80	.40	3.25
11. Spelling	3.50	3.20	4.00	2.01	.45	4.06
12. Expressional Fluency	5.92	5.85	6.00	.98	.22	.97
13. Ideational Fluency	5.12	5.30	5.00	1.08	.24	1.16
14. Sensitivity to Problems	6.12	5.85	6.00	1.42	.31	2.02
15. Deductive Reasoning	5.83	5.50	6.00	1.31	.29	1.73
16. Inductive Reasoning	5.10	4.90	6.00	1.29	.28	1.67
17. Originality	3.62	3.50	4.00	1.31	.29	1.73
18. Social Intelligence	4.37	4.60	4.00	1.27	.28	1.62
19. Aesthetic Judgment	.50	1.50	.00	1.82	.40	3.31
20. Musical Aptitude	.02	.05	.00	.22	.05	.05
B. Psychomotor Attribute						
21. Control Precision	.26	.40	.00	.59	.13	.35
22. Multilimb Coordination	.26	.70	.00	1.17	.26	1.37
23. Reaction Time	.26	.90	.00	1.58	.35	2.51
24. Eye-Hand Coordination	1.66	1.70	.00	1.68	.37	2.85
25. Manual Dexterity	.12	.30	.00	.65	.14	.43
26. Finger Dexterity	.26	.60	.00	1.35	.30	1.83
27. Arm-Hand Steadiness	.21	.65	.00	1.22	.27	1.50
28. Explosive Strength	.05	.10	.00	.30	.06	.09
29. Static Strength	.08	.25	.00	.63	.14	.40
30. Dynamic Strength	.08	.15	.00	.36	.08	.13
31. Body Equilibrium	.50	1.20	.00	1.54	.34	2.37
32. Stamina	.40	1.15	.00	1.84	.41	3.39
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.50	3.90	6.00	2.40	.53	5.77
34. Far Visual Acuity	.40	1.00	.00	1.37	.30	1.89
35. Depth Perception	.12	.20	.00	.41	.09	.16
36. Color Discrimination	.33	.80	.00	1.19	.26	1.43
37. Auditory Acuity	2.30	2.55	.00	2.18	.48	4.78
38. Tactual Discrimination	.12	.25	.00	.55	.12	.30

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Business Data Programmer

Job Activity: Write detailed logical flow chart in symbolic form to represent work order or data to be processed by computer system, and to describe input, output, and arithmetic and logical operations involved.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	3.00	2.95	.00	2.58	.57	6.68
2. Form Perception	2.50	2.70	.00	2.38	.53	5.69
3. Perceptual Speed	3.25	3.25	3.00	1.94	.43	3.77
4. Spatial Scanning	3.50	2.90	.00	2.33	.52	5.46
5. Spatial Orientation	.83	1.75	.00	2.19	.49	4.82
6. Visualization	4.00	3.45	6.00	2.60	.58	6.78
7. Number Facility	4.82	4.75	6.00	2.19	.49	5.66
8. Memory	4.21	4.50	4.00	1.79	.40	3.21
9. Verbal Comprehension	4.30	4.10	4.00	1.61	.36	2.62
10. Grammar	2.75	2.85	.00	2.18	.48	4.76
11. Spelling	3.50	3.05	4.00	2.11	.47	4.47
12. Expressional Fluency	2.83	2.65	4.00	2.03	.45	4.13
13. Ideational Fluency	2.90	2.95	.00	2.21	.49	4.89
14. Sensitivity to Problems	5.25	5.00	7.00	1.83	.41	3.36
15. Deductive Reasoning	5.83	5.65	6.00	1.30	.29	1.71
16. Inductive Reasoning	5.50	5.20	5.00	1.79	.40	3.22
17. Originality	3.50	3.55	3.00	1.73	.38	2.99
18. Social Intelligence	.50	1.15	.00	1.49	.33	2.23
19. Aesthetic Judgment	1.50	1.70	.00	1.62	.36	2.64
20. Musical Aptitude	.00	.00	.00	.00	.00	.00
B. Psychomotor Attribute						
21. Control Precision	.33	.75	.00	1.58	.35	2.51
22. Multilimb Coordination	.26	1.15	.00	2.18	.48	4.76
23. Reaction Time	.21	.95	.00	.41	1.84	3.41
24. Eye-Hand Coordination	1.50	2.30	.00	2.27	.50	5.16
25. Manual Dexterity	.40	1.35	.00	2.00	.44	4.02
26. Finger Dexterity	2.00	2.30	.00	2.20	.49	4.85
27. Arm-Hand Steadiness	1.83	2.25	.00	2.19	.49	4.82
28. Explosive Strength	.02	.05	.00	.22	.05	.05
29. Static Strength	.08	.25	.00	.63	.14	.40
30. Dynamic Strength	.08	.35	.00	1.13	.25	1.29
31. Body Equilibrium	.33	1.10	.00	1.71	.38	2.93
32. Stamina	.26	1.00	.00	1.65	.37	2.73
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.50	4.45	4.00	2.30	.51	5.31
34. Far Visual Acuity	.33	.85	.00	1.18	.26	1.39
35. Depth Perception	.21	.90	.00	1.88	.42	3.56
36. Color Discrimination	.12	.25	.00	.55	.12	.30
37. Auditory Acuity	.21	.80	.00	1.39	.31	1.95
38. Tactual Discrimination	.12	.60	.00	1.35	.30	1.83

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Business Data Programmer

Job Activity: Convert detailed logical flow chart to language processable by computer.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	1.50	2.50	.00	2.60	.58	6.78
2. Form Perception	1.83	2.60	.00	2.56	.57	6.56
3. Perceptual Speed	4.30	3.95	4.00	2.18	.48	4.78
4. Spatial Scanning	3.70	2.90	.00	2.38	.53	5.67
5. Spatial Orientation	.50	1.55	.00	2.25	.50	5.10
6. Visualization	3.50	3.10	.00	2.40	.53	5.77
7. Number Facility	5.50	4.70	6.00	2.36	.52	5.58
8. Memory	5.00	4.85	4.00	1.78	.39	3.18
9. Verbal Comprehension	4.10	4.10	4.00	2.17	.48	4.72
10. Grammar	3.70	3.40	4.00	2.23	.49	4.98
11. Spelling	4.00	2.90	4.00	2.24	.50	5.04
12. Expressional Fluency	4.00	3.65	.00	2.54	.56	6.45
13. Ideational Fluency	4.78	3.05	.00	2.18	.48	3.16
14. Sensitivity to Problems	5.50	4.85	3.00	1.95	.43	3.81
15. Deductive Reasoning	5.83	5.40	6.00	1.63	.36	2.67
16. Inductive Reasoning	4.83	4.85	4.00	1.66	.37	2.76
17. Originality	3.25	3.25	2.00	1.68	.37	2.82
18. Social Intelligence	.50	1.55	.00	1.90	.42	3.62
19. Aesthetic Judgment	2.16	2.05	.00	2.03	.45	4.15
20. Musical Aptitude	.00	.00	.00	.00	.00	.00
B. Psychomotor Attribute						
21. Control Precision	.26	.70	.00	1.59	.35	2.53
22. Multilimb Coordination	.16	.70	.00	1.68	.37	2.85
23. Reaction Time	.12	.85	.00	1.92	.43	3.71
24. Eye-Hand Coordination	1.16	1.95	.00	2.18	.48	4.78
25. Manual Dexterity	.40	1.30	.00	2.00	.44	4.01
26. Finger Dexterity	2.10	2.55	2.00	2.18	.48	4.78
27. Arm-Hand Steadiness	1.50	2.00	.00	2.07	.46	4.31
28. Explosive Strength	.02	.05	.00	.22	.05	.05
29. Static Strength	.02	.10	.00	.44	.10	.20
30. Dynamic Strength	.05	.75	.00	1.34	.30	1.81
31. Body Equilibrium	.26	1.10	.00	1.86	.41	3.46
32. Stamina	.33	1.40	.00	2.06	.46	4.25
C. Sensory Capacity Attribute						
33. Near Visual Acuity	5.00	4.75	4.00	2.12	.47	4.51
34. Far Visual Acuity	.40	.70	.00	.86	.19	.74
35. Depth Perception	.21	.90	.00	1.88	.42	3.56
36. Color Discrimination	.21	.40	.00	.68	.15	.46
37. Auditory Acuity	.16	.80	.00	1.47	.32	2.16
38. Tactual Discrimination	.08	.25	.00	.71	.16	.51

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Business Data Programmer

Job Activity: Devise sample input data to provide test of program adequacy.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	1.00	2.05	.00	2.52	.56	6.36
2. Form Perception	1.25	1.95	.00	2.16	.48	4.68
3. Perceptual Speed	3.50	3.15	.00	2.20	.49	4.87
4. Spatial Scanning	3.16	3.05	.00	2.18	.48	4.78
5. Spatial Orientation	.75	1.40	.00	1.87	.41	3.51
6. Visualization	1.50	2.05	.00	2.08	.46	4.36
7. Number Facility	5.90	5.40	6.00	1.75	.39	3.09
8. Memory	4.10	4.05	4.00	1.98	.44	3.94
9. Verbal Comprehension	3.00	2.80	4.00	2.06	.46	4.27
10. Grammar .50	.50	1.40	.00	1.60	.35	2.56
11. Spelling	1.25	1.85	.00	1.92	.43	3.71
12. Expressional Fluency	2.90	2.80	.00	2.16	.48	4.69
13. Ideational Fluency	3.00	3.05	.00	2.37	.53	5.62
14. Sensitivity to Problems	5.50	4.90	7.00	2.19	.49	4.83
15. Deductive Reasoning	5.64	5.20	6.00	1.70	.38	2.90
16. Inductive Reasoning	5.25	4.65	6.00	2.30	.51	5.29
17. Originality	4.50	3.85	5.00	2.34	.52	5.50
18. Social Intelligence	.40	1.20	.00	1.60	.36	2.58
19. Aesthetic Judgment	.40	1.45	.00	1.93	.43	3.73
20. Musical Aptitude	.00	.00	.00	.00	.00	.00
B. Psychomotor Attribute						
21. Control Precision	.26	.80	.00	1.57	.35	2.48
22. Multilimb Coordination	.26	.70	.00	1.41	.31	2.01
23. Reaction Time	.16	.70	.00	1.34	.30	1.80
24. Eye-Hand Coordination	.50	1.45	.00	1.87	.42	3.52
25. Manual Dexterity	.16	.80	.00	1.67	.37	2.80
26. Finger Dexterity	.90	1.50	.00	1.76	.39	3.10
27. Arm-Hand Steadiness	.40	1.45	.00	1.95	.43	3.83
28. Explosive Strength	.05	.10	.00	.30	.06	.09
29. Static Strength	.02	.10	.00	.44	.10	.20
30. Dynamic Strength	.08	.05	.00	1.46	.32	2.15
31. Body Equilibrium	.33	1.05	.00	1.66	.37	2.78
32. Stamina	.21	.90	.00	1.83	.41	3.35
C. Sensory Capacity Attribute						
33. Near Visual Acuity	3.50	4.00	3.00	2.15	.48	4.63
34. Far Visual Acuity	.33	.60	.00	.82	.18	.67
35. Depth Perception	.12	.45	.00	1.35	.30	1.83
36. Color Discrimination	.12	.25	.00	.55	.12	.30
37. Auditory Acuity	.16	.80	.00	1.54	.34	2.37
38. Tactual Discrimination	.05	.10	.00	.30	.06	.09

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Business Data Programmer

Job Activity: Prepare block diagram to specify equipment configuration.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	2.50	2.80	.00	2.54	.56	6.48
2. Form Perception	2.83	3.05	.00	2.48	.55	6.15
3. Perceptual Speed	3.10	2.90	.00	2.17	.48	4.72
4. Spatial Scanning	3.70	3.15	.00	2.20	.49	4.87
5. Spatial Orientation	.90	1.80	.00	2.19	.49	4.80
6. Visualization	3.70	3.10	.00	2.33	.52	5.46
7. Number Facility	3.00	3.05	.00	2.32	.52	5.41
8. Memory	3.50	3.5[illegible]	4.00	2.21	.49	4.89
9. Verbal Comprehension	3.50	3.05	4.00	1.95	.43	3.83
10. Grammar	2.50	2.20	.00	2.98	.44	3.95
11. Spelling	2.75	2.50	.00	2.03	.45	4.15
12. Expressional Fluency	2.70	2.75	3.00	1.97	.44	3.88
13. Ideational Fluency	2.50	2.40	3.00	1.81	.40	3.30
14. Sensitivity to Problems	4.00	3.65	5.00	2.03	.45	4.13
15. Deductive Reasoning	4.50	4.10	5.00	2.04	.45	4.20
16. Inductive Reasoning	3.50	3.55	3.00	2.21	.49	4.89
17. Originality	2.50	2.75	2.00	1.80	.40	3.25
18. Social Intelligence	1.16	1.40	.00	1.39	.31	1.93
19. Aesthetic Judgment	1.50	1.80	.00	1.82	.40	3.32
20. Musical Aptitude	.00	.00	.00	.00	.00	.00
B. Psychomotor Attribute						
21. Control Precision	.40	.80	.00	1.57	.35	2.48
22. Multilimb Coordination	.21	.95	.00	1.93	.43	3.73
23. Reaction Time	.05	.40	.00	1.23	.27	1.51
24. Eye-Hand Coordination	2.16	2.15	.00	2.03	.45	4.13
25. Manual Dexterity	.40	1.15	.00	1.78	.39	3.18
26. Finger Dexterity	2.00	2.30	.00	2.00	.44	4.01
27. Arm-Hand Steadiness	1.25	2.10	.00	2.24	.50	5.04
28. Explosive Strength	.02	.05	.00	.22	.05	.05
29. Static Strength	.02	.10	.00	.44	.10	.20
30. Dynamic Strength	.05	.35	.00	1.34	.30	1.81
31. Body Equilibrium	.26	1.05	.00	1.84	.41	3.41
32. Stamina	.21	.85	.00	1.53	.34	2.34
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.10	4.25	4.00	.47	2.12	4.51
34. Far Visual Acuity	.50	.85	.00	.98	.22	.97
35. Depth Perception	.33	1.00	.00	1.74	.39	3.05
36. Color Discrimination	.26	.60	.00	1.04	.23	1.09
37. Auditory Acuity	.16	.80	.00	1.47	.32	2.16
38. Tactual Discrimination	.12	.55	.00	1.46	.32	2.15

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Business Data Programmer

Job Activity: Observe or run test of coded program on computer, using actual or sampel input data.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	2.25	2.15	.00	1.89	.42	3.60
2. Form Perception	2.16	2.35	.00	2.27	.50	5.18
3. Perceptual Speed	4.83	3.95	5.00	2.43	.54	5.94
4. Spatial Scanning	4.50	3.75	5.00	2.24	.50	5.03
5. Spatial Orientation	.83	1.45	.00	1.82	.40	3.31
6. Visualization	2.50	2.45	.00	2.30	.51	5.31
7. Number Facility	4.83	4.60	4.00	2.21	.49	4.88
8. Memory	4.10	4.20	4.00	1.85	.41	3.43
9. Verbal Comprehension	2.16	2.25	3.00	1.83	.41	3.35
10. Grammar	1.00	1.50	.00	1.76	.39	3.10
11. Spelling	1.16	1.70	.00	1.75	.39	3.06
12. Expressional Fluency	2.70	2.55	3.00	1.98	.44	3.94
13. Ideational Fluency	2.16	2.50	.00	2.52	.56	6.36
14. Sensitivity to Problems	4.50	4.35	6.00	1.95	.43	3.81
15. Deductive Reasoning	4.50	4.40	7.00	2.30	.52	5.30
16. Inductive Reasoning	4.50	4.15	7.00	2.32	.52	5.39
17. Originality	1.75	1.75	.00	1.88	.42	3.56
18. Social Intelligence	.40	1.05	.00	1.43	.32	2.05
19. Aesthetic Judgment	.50	1.05	.00	1.19	.26	1.41
20. Musical Aptitude	.00	.00	.00	.00	.00	.00
B. Psychomotor Attribute						
21. Control Precision	.33	.95	.00	1.70	.38	2.89
22. Multilimb Coordination	.33	1.25	.00	2.12	.47	4.51
23. Reaction Time	.21	1.00	.00	1.77	.39	3.15
24. Eye-Hand Coordination	.40	1.40	.00	2.01	.45	4.04
25. Manual Dexterity	.26	.80	.00	1.39	.31	1.95
26. Finger Dexterity	.70	1.35	.00	1.81	.40	3.29
27. Arm-Hand Steadiness	.40	1.15	.00	1.84	.41	3.39
28. Explosive Strength	.02	.05	.00	.22	.05	.05
29. Static Strength	.05	.25	.00	.78	.17	.61
30. Dynamic Strength	.05	.30	.00	1.12	.25	1.27
31. Body Equilibrium	.26	.95	.00	1.57	.35	2.47
32. Stamina	.26	.95	.00	1.63	.36	2.68
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.50	4.70	4.00	2.22	.49	4.95
34. Far Visual Acuity	.50	.95	.00	1.19	.26	1.41
35. Depth Perception	.33	.75	.00	.31	1.41	1.98
36. Color Discrimination	.12	.30	.00	.65	.14	.43
37. Auditory Acuity	.26	1.20	.00	1.79	.40	3.22
38. Tactual Discrimination	.08	.25	.00	.71	.16	.51

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Business Data Programmer

Job Activity: Correct program errors by such methods as altering program steps and sequence.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	1.50	2.20	.00	2.54	.56	6.48
2. Form Perception	1.83	2.50	.00	2.52	.56	6.36
3. Perceptual Speed	4.00	3.40	.00	2.37	.53	5.62
4. Spatial Scanning	4.00	3.25	.00	2.48	.55	6.19
5. Spatial Orientation	.50	1.50	.00	2.16	.48	4.68
6. Visualization	1.50	2.45	.00	2.41	.54	5.83
7. Number Facility	5.00	4.65	7.00	2.39	.53	5.71
8. Memory	5.00	4.80	7.00	1.98	.44	3.95
9. Verbal Comprehension	3.50	3.25	5.00	2.31	.51	5.35
10. Grammar	2.50	2.25	.00	2.02	.45	4.09
11. Spelling	2.16	2.45	.00	2.21	.49	4.89
12. Expressional Fluency	3.33	3.45	3.00	2.23	.50	4.99
13. Ideational Fluency	3.50	3.55	.00	2.72	.60	7.41
14. Sensitivity to Problems	5.66	5.35	6.00	1.56	.35	2.45
15. Deductive Reasoning	6.37	6.15	7.00	1.08	.24	1.18
16. Inductive Reasoning	5.83	5.45	6.00	1.73	.38	2.99
17. Originality	3.30	3.40	3.00	1.87	.41	3.51
18. Social Intelligence	.50	1.40	.00	1.66	.37	2.77
19. Aesthetic Judgment	.40	1.25	.00	1.74	.39	3.03
20. Musical Aptitude	.00	.00	.00	.00	.00	.00
B. Psychomotor Attribute						
21. Control Precision	.33	.75	.00	.32	1.44	2.09
22. Multilimb Coordination	.26	.95	.00	1.70	.38	2.89
23. Reaction Time	.12	.75	.00	1.68	.37	2.82
24. Eye-Hand Coordination	.50	1.40	.00	1.87	.41	3.51
25. Manual Dexterity	.21	.70	.00	1.26	.28	1.58
26. Finger Dexterity	.70	1.35	.00	1.75	.39	3.08
27. Arm-Hand Steadiness	.40	1.50	.00	2.03	.45	4.15
28. Explosive Strength	.02	.05	.00	.22	.05	.05
29. Static Strength	.02	.10	.00	.44	.10	.20
30. Dynamic Strength	.05	.30	.00	1.12	.25	1.27
31. Body Equilibrium	.26	.80	.00	1.43	.32	2.06
32. Stamina	.21	1.00	.00	1.97	.44	3.89
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.10	4.20	4.00	2.09	.46	4.37
34. Far Visual Acuity	.33	.55	.00	.75	.17	.57
35. Depth Perception	.16	.55	.00	1.39	.31	1.94
36. Color Discrimination	.16	.30	.00	.57	.12	.32
37. Auditory Acuity	.21	1.15	.00	1.89	.42	3.60
38. Tactual Discrimination	.05	.15	.00	.48	.10	.23

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Business Data Programmer

Job Activity: Prepare written instructions (run book) to guide operating personnel during production runs.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	1.50	1.90	.00	2.02	.45	4.09
2. Form Perception	1.75	2.20	.00	2.35	.52	5.53
3. Perceptual Speed	2.25	2.45	.00	2.13	.47	4.57
4. Spatial Scanning	1.10	1.95	.00	2.18	.48	4.78
5. Spatial Orientation	.50	1.45	.00	1.93	.43	3.73
6. Visualization	2.83	2.70	.00	2.47	.55	6.11
7. Number Facility	3.25	3.35	2.00	2.13	.47	4.55
8. Memory	4.83	4.55	6.00	2.03	.45	4.15
9. Verbal Comprehension	5.72	5.15	6.00	1.59	.35	2.55
10. Grammar	5.25	5.15	7.00	1.53	.34	2.34
11. Spelling	5.10	5.20	4.00	1.39	.31	1.95
12. Expressional Fluency	5.25	5.00	6.00	1.62	.36	2.63
13. Ideational Fluency	3.83	3.50	4.00	1.73	.38	3.00
14. Sensitivity to Problems	5.50	4.90	6.00	1.68	.37	2.83
15. Deductive Reasoning	3.50	3.65	3.00	2.03	.45	4.13
16. Inductive Reasoning	3.83	3.60	4.00	.41	1.87	3.51
17. Originality	2.25	2.40	.00	1.78	.40	3.20
18. Social Intelligence	2.00	2.20	.00	1.93	.43	3.74
19. Aesthetic Judgment	.50	1.50	.00	1.85	.41	3.42
20. Musical Aptitude	.00	.00	.00	.00	.00	.00
B. Psychomotor Attribute						
21. Control Precision	.33	.85	.00	1.56	.35	2.45
22. Multilimb Coordination	.16	.70	.00	1.59	.35	2.53
23. Reaction Time	.12	.70	.00	1.59	.35	2.53
24. Eye-Hand Coordination	1.00	1.75	.00	1.99	.44	3.98
25. Manual Dexterity	.26	1.20	.00	1.85	.41	3.43
26. Finger Dexterity	1.50	2.10	.00	1.97	.44	3.88
27. Arm-Hand Steadiness	.83	1.90	.00	2.17	.48	4.72
28. Explosive Strength	.02	.05	.00	.22	.05	.05
29. Static Strength	.02	.10	.00	.44	.10	.20
30. Dynamic Strength	.05	.30	.00	1.12	.25	1.27
31. Body Equilibrium	.21	.90	.00	1.71	.38	2.93
32. Stamina	.21	.80	.00	1.50	.33	2.27
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.00	4.20	3.00	2.16	.48	4.69
34. Far Visual Acuity	.26	.55	.00	.82	.18	.68
35. Depth Perception	.16	.60	.00	1.60	.35	2.56
36. Color Discrimination	.12	.30	.00	.65	.14	.43
37. Auditory Acuity	.12	.60	.00	1.27	.28	1.62
38. Tactual Discrimination	.08	.15	.00	.36	.08	.13

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Business Data Programmer

Job Activity: Analyze, review, and rewrite programs to increase operating efficiency or adapt to new requirements.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	1.83	2.30	.00	2.53	.56	6.43
2. Form Perception	1.50	2.20	.00	2.44	.54	5.95
3. Perceptual Speed	3.75	3.40	.00	2.23	.49	4.98
4. Spatial Scanning	3.16	2.85	.00	2.20	.49	4.87
5. Spatial Orientation	.50	1.35	.00	1.89	.42	3.60
6. Visualization	2.50	2.75	.00	2.48	.55	6.19
7. Number Facility	4.50	4.25	7.00	2.55	.57	6.51
8. Memory	4.50	4.55	7.00	2.03	.45	4.15
9. Verbal Comprehension	4.00	3.80	4.00	2.30	.51	5.32
10. Grammar	2.25	2.65	.00	2.15	.48	4.66
11. Spelling	2.30	2.70	2.00	2.20	.49	4.85
12. Expressional Fluency	3.90	3.80	4.00	2.01	.45	4.06
13. Ideational Fluency	4.64	4.30	5.00	1.89	.42	3.58
14. Sensitivity to Problems	6.07	5.50	6.00	1.67	.37	2.78
15. Deductive Reasoning	6.10	5.85	7.00	1.18	.26	1.39
16. Inductive Reasoning	5.75	5.50	7.00	1.70	.38	2.89
17. Originality4.16	4.16	4.10	3.00	1.61	.36	2.62
18. Social Intelligence	1.75	2.05	.00	2.16	.48	4.68
19. Aesthetic Judgment	.33	1.35	.00	1.87	.41	3.50
20. Musical Aptitude	.00	.00	.00	.00	.00	.00
B. Psychomotor Attribute						
21. Control Precision	.21	.65	.00	1.46	.32	2.13
22. Multilimb Coordination	.21	.80	.00	1.64	.36	2.69
23. Reaction Time	.08	.35	.00	.98	.22	.97
24. Eye-Hand Coordination	.50	1.50	.00	1.87	.42	3.52
25. Manual Dexterity	.21	.70	.00	1.21	.27	1.48
26. Finger Dexterity	1.00	1.50	.00	1.70	.38	2.89
27. Arm-Hand Steadiness	.40	1.45	.00	1.95	.43	3.83
28. Explosive Strength	.02	.05	.00	.22	.05	.05
29. Static Strength	.02	.10	.00	.44	.10	.20
30. Dynamic Strength	.05	.30	.00	1.12	.25	1.27
31. Body Equilibrium	.21	.90	.00	1.61	.36	2.62
32. Stamina	.21	1.00	.00	1.80	.40	3.26
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.50	4.40	4.00	2.06	.46	4.25
34. Far Visual Acuity	.26	.70	.00	1.30	.29	1.69
35. Depth Perception	.16	.65	.00	1.49	.33	2.23
36. Color Discrimination	.21	.40	.00	.68	.15	.46
37. Auditory Acuity	.26	1.30	.00	1.94	.43	3.80
38. Tactual Discrimination	.05	.10	.00	.30	.06	.09

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Business Data Programmer

Job Activity: Compile documentation of program development and subsequent revisions.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure 1.	1.50	2.05	.00	2.18	.48	4.78
2. Form Perception	1.16	2.10	.00	2.36	.52	5.56
3. Perceptual Speed	2.16	2.40	.00	2.08	.46	4.35
4. Spatial Scanning	1.25	2.00	.00	2.02	.45	4.10
5. Spatial Orientation	.66	1.50	.00	2.03	.45	4.15
6. Visualization	1.25	2.00	.00	2.00	.44	4.00
7. Number Facility	2.50	2.70	.00	2.34	.52	5.48
8. Memory	4.16	4.15	6.00	2.08	.46	4.34
9. Verbal Comprehension	4.75	4.35	6.00	1.87	.42	3.50
10. Grammar	4.50	4.40	4.00	1.90	.42	3.62
11. Spelling	4.70	4.55	4.00	1.90	.42	3.62
12. Expressional Fluency	5.16	4.65	6.00	1.98	.44	3.92
13. Ideational Fluency	3.70	3.30	4.00	2.02	.45	4.11
14. Sensitivity to Problems	4.16	4.15	6.00	2.23	.49	4.97
15. Deductive Reasoning	3.16	3.20	.00	2.37	.53	5.64
16. Inductive Reasoning	3.50	3.05	.00	2.28	.52	5.20
17. Originality	1.92	2.10	2.00	1.80	.40	3.25
18. Social Intelligence	2.50	2.25	.00	2.02	.45	4.09
19. Aesthetic Judgment	.50	1.35	.00	1.72	.38	2.97
20. Musical Aptitude	.00	.00	.00	.00	.00	.00
B. Psychomotor Attribute						
21. Control Precision	.26	.80	.00	1.57	.35	2.48
22. Multilimb Coordination	.23	.90	.00	1.65	.36	2.72
23. Reaction Time	.08	.30	.00	.80	.17	.64
24. Eye-Hand Coordination	.83	1.65	.00	2.05	.46	4.23
25. Manual Dexterity	.40	1.30	.00	2.00	.44	4.01
26. Finger Dexterity	1.75	2.15	.00	2.05	.46	4.23
27. Arm-Hand Steadiness	.50	1.75	.00	2.24	.50	5.03
28. Explosive Strength	.02	.05	.00	.22	.05	.05
29. Static Strength	.08	.30	.00	.80	.17	.64
30. Dynamic Strength	.05	.30	.00	1.12	.25	1.27
31. Body Equilibrium	.21	1.00	.00	1.86	.41	3.47
32. Stamina	.21	.95	.00	1.76	.39	3.10
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.50	4.50	3.00	2.01	.45	4.05
34. Far Visual Acuity	.50	.85	.00	1.22	.27	1.50
35. Depth Perception	.26	.70	.00	1.45	.32	2.11
36. Color Discrimination	.21	.45	.00	.75	.17	.57
37. Auditory Acuity	.26	.95	.00	1.53	.34	2.36
38. Tactual Discrimination	.08	.40	.00	1.35	.30	1.83

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: Business Data Programmer

Job Activity: Write program for one make and type of computer.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	1.50	2.25	.00	2.61	.58	6.82
2. Form Perception	2.00	2.60	.00	2.70	.60	7.30
3. Perceptual Speed	4.50	3.75	.00	2.65	.59	7.03
4. Spatial Scanning	3.16	2.95	.00	2.52	.56	6.36
5. Spatial Orientation	.50	1.60	.00	2.18	.48	4.77
6. Visualization	3.50	3.10	.00	2.69	.60	7.25
7. Number Facility	5.50	4.75	7.00	2.29	.51	5.25
8. Memory	5.00	4.90	7.00	1.94	.43	3.77
9. Verbal Comprehension	4.50	4.40	5.00	1.90	.42	3.62
10. Grammar	3.16	3.60	2.00	2.30	.51	5.30
11. Spelling	3.50	3.75	2.00	2.29	.51	5.25
12. Expressional Fluency	4.30	4.10	4.00	2.17	.48	4.72
13. Ideational Fluency	3.83	3.75	3.00	2.22	.49	4.93
14. Sensitivity to Problems	5.90	5.55	7.00	1.50	.33	2.26
15. Deductive Reasoning	6.16	5.95	7.00	1.14	.25	1.31
16. Inductive Reasoning	5.75	5.50	7.00	1.53	.34	2.36
17. Originality	3.50	3.50	3.00	2.03	.45	4.15
18. Social Intelligence	1.00	1.40	.00	1.63	.36	2.67
19. Aesthetic Judgment	.83	1.60	.00	2.03	.45	4.14
20. Musical Aptitude	.02	.05	.00	.22	.05	.05
B. Psychomotor Attribute						
21. Control Precision	.26	.80	.00	1.57	.35	2.48
22. Multilimb Coordination	.21	.70	.00	1.55	.34	2.43
23. Reaction Time	.12	.50	.00	1.14	.25	1.31
24. Eye-Hand Coordination	.83	1.75	.00	2.07	.46	4.30
25. Manual Dexterity	.26	.90	.00	1.51	.34	2.30
26. Finger Dexterity	1.33	1.95	1.00	1.84	.41	3.41
27. Arm-Hand Steadiness	1.00	1.75	.00	1.99	.44	3.98
28. Explosive Strength	.05	.10	.00	.30	.06	.09
29. Static Strength	.05	.25	.00	.78	.17	.61
30. Dynamic Strength	.05	.35	.00	1.34	.30	1.81
31. Body Equilibrium	.21	1.00	.00	1.86	.41	3.47
32. Stamina	.26	1.10	.00	1.99	.44	3.98
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.50	4.40	4.00	2.06	.46	4.25
34. Far Visual Acuity	.33	.65	.00	.98	.22	.97
35. Depth Perception	.16	.20	.00	1.35	.30	1.84
36. Color Discrimination	.16	.30	.00	.57	.12	.32
37. Auditory Acuity	.33	1.25	.00	1.77	.39	3.14
38. Tactual Discrimination	.08	.15	.00	.36	.08	.13

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: General Secretary

Job Activity: Read and route incoming mail.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	1.16	2.35	.00	2.60	.58	6.76
2. Form Perception	1.83	2.30	.00	2.25	.50	5.06
3. Perceptual Speed	4.16	3.55	.00	2.[illegible]	.59	7.10
4. Spatial Scanning	3.10	3.10	3.00	2.29	.51	5.25
5. Spatial Orientation	1.00	2.20	.00	2.54	.56	6.48
6. Visualization	.40	1.80	.00	2.35	.52	5.53
7. Number Facility	1.00	1.90	.00	2.36	.52	5.56
8. Memory	4.33	4.30	4.00	2.31	.51	5.37
9. Verbal Comprehension	5.50	4.70	7.00	2.49	.55	6.22
10. Grammar	3.83	3.40	.00	2.66	.59	7.09
11. Spelling	4.25	3.95	7.00	2.72	.60	7.41
12. Expressional Fluency	1.50	2.25	.00	2.35	.52	5.56
13. Ideational Fluency	1.16	2.00	.00	2.22	.49	4.94
14. Sensitivity to Problems	2.50	2.50	.00	2.16	.48	4.68
15. Deductive Reasoning	.50	1.75	.00	2.26	.50	5.14
16. Inductive Reasoning	.40	1.15	.00	1.69	.37	2.87
17. Originality	.12	.75	.00	1.88	.42	3.56
18. Social Intelligence	.33	1.50	.00	2.54	.56	6.47
19. Aesthetic Judgment	.12	1.00	.00	2.10	.47	4.42
20. Musical Aptitude	.05	.15	.00	.48	.10	.23
B. Psychomotor Attribute						
21. Control Precision	.26	.45	.00	.68	.15	.47
22. Multilimb Coordination	1.00	2.10	.00	2.46	.55	6.09
23. Reaction Time	3.50	3.40	.00	.62	2.79	7.83
24. Eye-Hand Coordination	4.16	3.80	5.00	2.23	.50	5.01
25. Manual Dexterity	2.70	2.70	.00	2.36	.52	5.58
26. Finger Dexterity	1.50	2.25	.00	2.31	.51	5.35
27. Arm-Hand Steadiness	2.16	2.90	.00	2.61	.58	6.83
28. Explosive Strength	.16	.55	.00	1.09	.24	1.20
29. Static Strength	.26	.90	.00	1.44	.32	2.09
30. Dynamic Strength	.05	.15	.00	.48	.10	.23
31. Body Equilibrium	4.30	1.75	.00	2.07	.46	1.10
32. Stamina	.33	1.15	.00	1.92	.43	3.71
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.50	4.70	4.00	1.94	.43	3.80
34. Far Visual Acuity	.40	1.45	.00	2.23	.50	4.99
35. Depth Perception	.83	1.40	.00	1.75	.39	3.09
36. Color Discrimination	.40	1.10	.00	1.77	.39	3.14
37. Auditory Acuity	.70	1.75	.00	2.55	.57	6.51
38. Tactual Discrimination	.50	1.00	.00	1.33	.29	1.78

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: General Secretary

Job Activity: Locate and attach appropriate file to correspondence to be answerd by employer.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	3.50	3.25	.00	2.51	.56	6.30
2. Form Perception	2.50	2.65	.00	2.47	.55	6.13
3. Perceptual Speed	4.16	4.15	3.00	2.27	.50	5.18
4. Spatial Scanning	3.75	3.60	4.00	2.25	.50	5.09
5. Spatial Orientation	1.00	2.15	.00	2.54	.56	6.45
6. Visualization	1.00	2.30	.00	2.67	.59	7.16
7. Number Facility	.50	1.75	.00	2.33	.52	5.46
8. Memory	4.33	4.65	4.00	2.03	.45	4.13
9. Verbal Comprehension	4.75	4.10	7.00	2.57	.57	6.62
10. Grammar	2.50	2.65	.00	2.43	.54	5.92
11. Spelling	3.75	3.50	.00	2.74	.61	7.52
12. Expressional Fluency	2.83	2.85	.00	2.68	.59	7.18
13. Ideational Fluency	.50	2.10	.00	2.44	.54	5.98
14. Sensitivity to Problems	3.25	3.10	4.00	2.31	.51	5.35
15. Deductive Reasoning	3.75	3.30	.00	.57	2.55	6.53
16. Inductive Reasoning	1.83	2.75	.00	2.71	.60	7.35
17. Originality	.83	1.75	.00	2.17	.48	4.72
18. Social Intelligence	.50	2.05	.00	2.54	.56	6.47
19. Aesthetic Judgment	.40	1.45	.00	1.82	.40	3.31
20. Musical Aptitude	.05	.40	.00	1.56	.35	2.46
B. Psychomotor Attribute						
21. Control Precision	.33	1.00	.00	1.62	.36	2.63
22. Multilimb Coordination	2.83	2.85	.00	2.39	.53	5.71
23. Reaction Time	3.50	3.90	3.00	2.19	.49	4.83
24. Eye-Hand Coordination	4.10	4.05	7.00	2.48	.55	6.25
25. Manual Dexterity	2.50	2.95	.00	2.58	.57	6.68
26. Finger Dexterity	3.50	3.20	1.00	2.56	.57	6.58
27. Arm-Hand Steadiness	2.16	2.95	.00	2.54	.56	6.47
28. Explosive Strength	.12	.50	.00	1.14	.25	1.31
29. Static Strength	.26	1.15	.00	1.95	.43	3.81
30. Dynamic Strength	.08	.55	.00	1.66	.37	2.78
31. Body Equilibrium	1.16	2.35	.00	2.58	.57	6.66
32. Stamina	.50	1.60	.00	2.18	.48	4.77
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.30	4.60	7.00	2.25	.50	5.09
34. Far Visual Acuity	1.00	2.35	.00	2.83	.63	8.02
35. Depth Perception	2.75	2.60	.00	2.39	.53	5.72
36. Color Discrimination	1.50	1.95	.00	2.16	.48	4.68
37. Auditory Acuity	.50	1.60	.00	2.47	.55	6.14
38. Tactual Discrimination	.75	1.40	.00	1.84	.41	3.41

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: General Secretary

Job Activity: Take dictation in shorthand or on stenotype machine.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	.31	1.22	.00	1.92	.45	3.71
2. Form Perception	2.50	2.72	.00	2.84	.67	8.09
3. Perceptual Speed	4.50	4.33	4.00	2.47	.58	6.11
4. Spatial Scanning	1.50	2.11	.00	2.37	.55	5.63
5. Spatial Orientation	.25	.83	.00	1.65	.39	2.73
6. Visualization	.31	1.33	.00	2.16	.51	4.70
7. Number Facility	.40	1.38	.00	2.11	.49	4.48
8. Memory	5.50	4.55	7.00	2.74	.64	7.55
9. Verbal Comprehension	5.50	4.77	7.00	2.60	.61	6.77
10. Grammar	6.00	5.44	7.00	2.17	.51	4.73
11. Spelling	6.50	5.61	7.00	2.20	.51	4.84
12. Expressional Fluency	3.83	3.61	7.00	2.78	.65	7.78
13. Ideational Fluency	.50	2.22	.00	2.71	.63	7.35
14. Sensitivity to Problems	1.50	2.66	.00	2.93	.69	8.58
15. Deductive Reasoning	.50	2.11	.00	2.69	.63	7.28
16. Inductive Reasoning	1.00	2.38	.00	2.74	.64	7.54
17. Originality	.50	1.83	.00	2.50	.59	6.26
18. Social Intelligence	1.16	2.38	.00	2.74	.64	7.54
19. Aesthetic Judgment	.31	1.44	.00	2.30	.54	5.32
20. Musical Aptitude	.06	.27	.00	.95	.22	.91
B. Psychomotor Attribute						
21. Control Precision	2.50	3.00	.00	3.04	.71	9.29
22. Multilimb Coordination	3.10	3.33	.00	2.76	.65	7.64
23. Reaction Time	5.00	4.33	7.00	2.70	.63	7.29
24. Eye-Hand Coordination	4.50	4.11	7.00	2.84	.67	8.10
25. Manual Dexterity	3.70	3.44	4.00	2.50	.59	6.26
26. Finger Dexterity	5.50	4.61	7.00	2.74	.64	7.54
27. Arm-Hand Steadiness	5.25	4.61	7.00	2.47	.58	6.13
28. Explosive Strength	.10	.61	.00	1.75	.41	3.07
29. Static Strength	.02	.38	.00	1.65	.38	2.72
30. Dynamic Strength	.14	.94	.00	2.26	.53	5.11
31. Body Equilibrium	1.25	1.94	.00	2.12	.50	4.52
32. Stamina	.25	1.33	.00	2.42	.57	5.88
C. Sensory Capacity Attribute						
33. Near Visual Acuity	6.00	5.05	7.00	2.53	.59	6.40
34. Far Visual Acuity	.31	1.16	.00	2.17	.51	4.73
35. Depth Perception	.40	1.77	.00	2.55	.60	6.53
36. Color Discrimination	.19	.88	.00	1.96	.46	3.86
37. Auditory Acuity	5.83	4.77	7.00	2.64	.62	7.00
38. Tactual Discrimination	.40	1.72	.00	2.51	.59	6.33

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: General Secretary

Job Activity: Transcribe notes on typewriter or transcribe from voice recordings.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	.36	1.68	.00	2.56	.58	6.56
2. Form Perception	1.00	2.68	.00	3.03	.69	9.22
3. Perceptual Speed	5.87	4.57	7.00	2.81	.64	7.92
4. Spatial Scanning	2.75	3.21	.00	2.76	.63	7.62
5. Spatial Orientation	.87	2.15	.00	2.65	.60	7.02
6. Visualization	.36	1.73	.00	2.76	.63	7.64
7. Number Facility	.91	2.15	.00	2.67	.61	7.14
8. Memory	4.25	4.52	7.00	2.38	.54	5.70
9. Verbal Comprehension	6.55	5.42	7.00	2.11	.48	4.48
10. Grammar	6.70	5.89	7.00	1.91	.43	3.65
11. Spelling	6.70	5.89	7.00	1.91	.43	3.65
12. Expressional Fluency	4.00	3.78	7.00	2.76	.63	7.62
13. Ideational Fluency	1.12	2.52	.00	2.81	.64	7.93
14. Sensitivity to Problems	1.12	2.47	.00	2.75	.63	7.59
15. Deductive Reasoning	2.25	2.36	.00	2.24	.51	5.02
16. Inductive Reasoning	2.66	2.57	.00	2.43	.55	5.92
17. Originality	1.12	2.47	.00	2.71	.62	7.37
18. Social Intelligence	1.75	2.42	.00	2.63	.60	6.92
19. Aesthetic Judgment	.36	1.78	.00	2.46	.56	6.06
20 Musical Aptitude	.05	.10	.00	.31	.07	.09
B. Psychomotor Attribute						
21. Control Precision	4.75	3.84	.00	2.94	.67	8.69
22. Multilimb Coordination	5.62	4.26	7.00	2.90	.66	8.42
23. Reaction Time	5.00	4.47	7.00	2.65	.60	7.04
24. Eye-Hand Coordination	5.66	4.31	7.00	2.73	.62	7.45
25. Manual Dexterity	3.00	3.05	.00	2.59	.59	6.71
26. Finger Dexterity	6.00	4.73	7.00	2.70	.62	7.31
27. Arm-Hand Steadiness	4.87	4.21	5.00	2.48	.57	6.17
28. Explosive Strength	.13	.31	.00	.74	.17	.56
29. Static Strength	.17	.63	.00	1.49	.34	2.24
30. Dynamic Strength	.17	.73	.00	1.72	.39	2.98
31 Body Equilibrium	1.20	2.00	.00	2.08	.47	4.33
32. Stamina	.91	1.73	.00	2.20	.50	4.87
C. Sensory Capacity Attribute						
33. Near Visual Acuity	6.55	5.21	7.00	2.44	.56	5.95
34. Far Visual Acuity	.45	1.63	.00	2.58	.59	6.69
35. Depth Perception	.45	1.36	.00	2.26	.52	5.13
36. Color Discrimination	.23	1.26	.00	2.33	.53	5.42
37. Auditory Acuity	6.25	4.73	7.00	2.80	.64	7.87
38. Tactual Discrimination	.75	2.15	.00	2.67	.61	7.14

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: General Secretary

Job Activity: Compose routine correspondence.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	1.10	2.05	.00	2.38	.56	5.70
2. Form Perception	.83	2.16	.00	2.59	.61	6.73
3. Perceptual Speed	4.50	3.83	.00	2.68	.63	7.20
4. Spatial Scanning	2.16	2.66	.00	2.47	.58	6.11
5. Spatial Orientation	.40	1.72	.00	2.492	.58	6.21
6. Visualization	1.50	2.77	.00	2.79	.66	7.83
7. Number Facility	2.16	3.00	1.00	2.65	.62	7.05
8. Memory	4.00	4.11	4.00	2.11	.49	4.45
9. Verbal Comprehension	6.50	5.66	7.00	1.91	.45	3.64
10. Grammar	6.60	6.11	7.00	1.36	.32	1.86
11. Spelling	6.60	6.16	7.00	1.20	.28	1.44
12. Expressional Fluency	6.30	5.61	7.00	1.88	.44	3.54
13. Ideational Fluency	5.50	4.05	6.00	2.71	.63	7.35
14. Sensitivity to Problems	4.16	3.83	5.00	2.30	.54	5.32
15. Deductive Reasoning	3.50	3.22	1.00	2.31	.54	5.35
16. Inductive Reasoning	3.00	3.05	1.00	2.50	.59	6.29
17. Originality	4.16	4.00	6.00	2.22	.52	4.94
18. Social Intelligence	3.16	3.16	.00	2.09	.49	4.38
19. Aesthetic Judgment	2.00	2.50	.00	2.70	.63	7.32
20. Musical Aptitude	.06	.16	.00	.51	.12	.26
B. Psychomotor Attribute						
21. Control Precision	.50	1.94	.00	2.53	.59	6.40
22. Multilimb Coordination	.75	1.83	.00	2.43	.57	5.91
23. Reaction Time	2.00	2.61	.00	2.38	.56	5.66
24. Eye-Hand Coordination	1.50	2.33	.00	2.37	.56	5.64
25. Manual Dexterity	.40	1.83	.00	2.66	.62	7.08
26. Finger Dexterity	4.83	4.05	.00	2.68	.63	7.23
27. Arm-Hand Steadiness	4.16	3.66	.00	2.56	.60	6.58
28. Explosive Strength	.06	.33	.00	1.02	.24	1.05
29. Static Strength	.19	.77	.00	1.55	.36	2.41
30. Dynamic Strength	.19	.66	.00	1.28	.30	1.64
31. Body Equilibrium	.50	1.44	.00	1.88	.44	3.55
32. Stamina	.83	2.05	.00	2.50	.59	6.29
C. Sensory Capacity Attribute						
33. Near Visual Acuity	6.00	5.33	6.00	1.97	.46	3.88
34. Far Visual Acuity	.40	1.55	.00	2.54	.60	6.49
35. Depth Perception	.50	1.55	.00	2.20	.51	4.85
36. Color Discrimination	.50	1.22	.00	1.66	.39	2.77
37. Auditory Acuity	.40	1.27	.00	2.10	.49	4.44
38. Tactual Discrimination	.40	1.38	.00	2.03	.47	4.13

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: General Secretary

Job Activity: Type routine correspondence.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	1.50	2.55	.00	2.58	.57	6.68
2. Form Perception	1.83	2.50	.00	2.43	.54	5.94
3. Perceptual Speed	4.50	4.80	4.00	1.96	.43	3.85
4. Spatial Scanning	4.16	3.65	5.00	2.45	.54	6.02
5. Spatial Orientation	.83	2.05	.00	2.48	.55	6.15
6. Visualization	1.10	2.60	.00	2.89	.64	8.35
7. Number Facility	2.00	2.70	.00	2.84	.63	8.11
8. Memory	3.83	3.70	1.00	2.38	.53	5.69
9. Verbal Comprehension	5.25	4.35	7.00	2.97	.66	8.87
10. Grammar	6.78	6.10	7.00	1.58	.35	2.51
11. Spelling	6.78	6.10	7.00	1.58	.35	2.51
12. Expressional Fluency	4.50	3.65	.00	2.77	.62	7.71
13. Ideational Fluency	3.50	2.75	.00	2.33	.52	5.46
14. Sensitivity to Problems	4.10	3.65	4.00	2.41	.53	5.81
15. Deductive Reasoning	3.50	3.15	.00	2.27	.50	5.18
16. Inductive Reasoning	1.25	2.25	.00	2.46	.55	6.09
17. Originality	2.50	2.80	.00	2.70	.60	7.32
18. Social Intelligence	.50	2.30	.00	2.77	.62	7.69
19. Aesthetic Judgment	1.00	2.35	.00	2.77	.62	7.71
20. Musical Aptitude	.08	.40	.00	1.35	.30	1.83
B. Psychomotor Attribute						
21. Control Precision	4.25	3.95	7.00	2.64	.59	6.99
22. Multilimb Coordination	4.50	3.80	7.00	3.01	.67	9.11
23. Reaction Time	5.50	4.45	7.00	2.70	.60	7.31
24. Eye-Hand Coordination	6.00	5.10	7.00	2.24	.50	5.04
25. Manual Dexterity	4.00	3.70	7.00	2.67	.59	7.16
26. Finger Dexterity	6.50	5.35	7.00	2.27	.50	5.18
27. Arm-Hand Steadiness	5.00	4.25	7.00	2.63	.58	6.93
28. Explosive Strength	.08	.80	.00	2.16	.48	4.69
29. Static Strength	.16	.90	.00	1.91	.42	3.67
30. Dynamic Strength	.21	1.35	.00	2.43	.54	5.92
31. Body Equilibrium	.83	2.15	.00	2.64	.59	6.97
32. Stamina	1.75	2.50	.00	2.50	.56	6.26
C. Sensory Capacity Attribute						
33. Near Visual Acuity	5.83	5.40	7.00	1.75	.39	3.09
34. Far Visual Acuity	.40	2.10	.00	2.92	.65	8.51
35. Depth Perception	.40	1.65	.00	2.43	.54	5.92
36. Color Discrimination	.33	1.55	.00	2.48	.55	6.15
37. Auditory Acuity	.40	1.85	.00	2.72	.60	7.39
38. Tactual Discrimination	1.16	1.85	.00	2.23	.49	4.97

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: General Secretary

Job Activity: File correspondence and other records.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	1.12	2.26	.00	2.55	.58	6.53
2. Form Perception	2.00	2.84	.00	2.87	.65	8.25
3. Perceptual Speed	4.25	3.68	.00	2.58	.59	6.67
4. Spatial Scanning	4.62	4.00	5.00	2.44	.56	6.00
5. Spatial Orientation	.91	1.94	.00	2.46	.56	6.05
6. Visualization	.87	1.84	.00	2.29	.56	5.25
7. Number Facility	1.00	2.47	.00	2.81	.64	7.93
8. Memory	4.75	4.10	7.00	2.66	.61	7.09
9. Verbal Comprehension	3.00	3.63	1.00	2.73	.62	7.46
10. Grammar	2.12	2.78	.00	2.46	.56	6.06
11. Spelling	4.12	3.89	4.00	2.51	.57	6.32
12. Expressional Fluency	.50	1.55	.00	2.20	.51	4.85
13. Ideational Fluency	.45	1.73	.00	2.37	.54	5.64
14. Sensitivity to Problems	1.25	2.36	.00	2.58	.59	6.69
15. Deductive Reasoning	1.75	2.26	.00	2.30	.52	5.31
16. Inductive Reasoning	.45	1.42	.00	2.19	.50	4.81
17. Originality	.80	1.68	.00	2.23	.51	5.00
18. Social Intelligence	.29	1.68	.00	2.77	.63	7.67
19. Aesthetic Judgment	.36	1.21	.00	1.84	.42	3.39
20. Musical Aptitude	.05	.10	.00	.31	.07	.09
B. Psychomotor Attribute						
21. Control Precision	.87	1.63	.00	2.11	.48	4.46
22. Multilimb Coordination	3.71	3.52	4.00	2.09	.48	4.37
23. Reaction Time	2.25	2.94	1.00	2.48	.57	6.16
24. Eye-Hand Coordination	3.37	3.63	3.00	2.40	.55	5.80
25. Manual Dexterity	1.25	2.57	.00	2.87	.65	8.25
26. Finger Dexterity	3.12	3.63	3.00	2.54	.58	6.46
27. Arm-Hand Steadiness	2.62	2.78	.00	2.57	.59	6.62
28. Explosive Strength	.09	.31	.00	.14	.21	.80
29. Static Strength	.29	1.05	.00	1.68	.38	2.83
30. Dynamic Strength	.13	.47	.00	1.12	.25	1.26
31. Body Equilibrium	1.25	1.84	.00	2.06	.47	4.25
32. Stamina	.80	1.47	.00	1.80	.41	3.26
C. Sensory Capacity Attribute						
33. Near Visual Acuity	5.00	4.57	7.00	2.19	.50	4.81
34. Far Visual Acuity	.80	2.00	.00	2.70	.62	7.33
35. Depth Perception	1.12	1.84	.00	2.14	.49	4.58
36. Color Discrimination	.75	1.57	.00	1.92	.44	3.70
37. Auditory Acuity	.29	1.05	.00	2.06	.47	4.27
38. Tactual Discrimination	.23	.73	.00	1.36	.31	1.87

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: General Secretary

Job Activity: Answer telephone and give information to callers.

Human Attributes		Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A.	**Cognitive Attribute**						
1.	Closure	.33	1.80	.00	2.70	.60	7.32
2.	Form Perception	.33	1.50	.00	2.25	.50	5.10
3.	Perceptual Speed	1.00	2.10	.00	2.57	.57	6.62
4.	Spatial Scanning	.75	1.60	.00	2.23	.49	4.98
5.	Spatial Orientation	.33	1.45	.00	2.28	.51	5.20
6.	Visualization	.33	1.45	.00	2.23	.50	4.99
7.	Number Facility	.83	1.85	.00	2.45	.54	6.02
8.	Memory	4.50	4.75	7.00	1.99	.44	3.98
9.	Verbal Comprehension	6.59	5.50	7.00	2.11	.47	4.47
10.	Grammar	6.16	5.05	7.00	2.43	.54	5.94
11.	Spelling	3.83	3.85	7.00	2.64	.59	6.97
12.	Expressional Fluency	5.95	5.95	7.00	1.39	.31	7.00
13.	Ideational Fluency	4.25	3.95	4.00	2.32	.52	5.41
14.	Sensitivity to Problems	5.16	4.45	7.00	2.62	.58	6.89
15.	Deductive Reasoning	4.16	3.70	.00	2.45	.54	6.01
16.	Inductive Reasoning	3.16	3.15	.00	2.41	.53	5.81
17.	Originality	1.83	2.45	.00	2.39	.53	5.73
18.	Social Intelligence	5.00	4.75	7.00	2.22	.49	4.93
19.	Aesthetic Judgment	.33	1.70	.00	2.59	.58	6.74
20.	Musical Aptitude	.02	.05	.00	.22	.05	.05
B.	**Psychomotor Attribute**						
21.	Control Precision	.83	2.10	.00	2.65	.59	7.04
22.	Multilimb Coordination	1.50	2.20	.00	2.19	.49	4.80
23.	Reaction Time	3.16	3.50	1.00	2.39	.53	5.73
24.	Eye-Hand Coordination	3.00	3.25	1.00	2.53	.56	6.40
25.	Manual Dexterity	1.30	2.30	.00	2.49	.55	6.22
26.	Finger Dexterity	3.50	3.40	2.00	2.23	.49	4.98
27.	Arm-Hand Steadiness	2.16	2.65	.00	2.41	.53	5.81
28.	Explosive Strength	.08	.55	.00	1.63	.36	2.68
29.	Static Strength	.21	1.10	.00	2.12	.47	4.51
30.	Dynamic Strength	.16	.85	.00	1.84	.41	3.39
31.	Body Equilibrium	.83	1.70	.00	2.27	.50	5.16
32.	Stamina	4.83	1.65	.00	2.13	.47	4.55
C.	**Sensory Capacity Attribute**						
33.	Near Visual Acuity	3.83	3.40	.00	2.66	.59	7.09
34.	Far Visual Acuity	1.00	1.85	.00	2.15	.48	4.66
35.	Depth Perception	.40	1.35	.00	2.03	.45	4.13
36.	Color Discrimination	.40	1.50	.00	2.09	.46	4.36
37.	Auditory Acuity	6.30	5.15	7.00	2.58	.57	6.66
38.	Tactual Discrimination	.33	1.25	.00	2.12	.47	4.57

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: General Secretary

Job Activity: Route calls to appropriate officials.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	.50	2.00	.00	2.63	.58	6.94
2. Form Perception	.40	1.65	.00	2.47	.55	6.13
3. Perceptual Speed	1.00	2.05	.00	2.41	.54	5.83
4. Spatial Scanning	1.50	2.25	.00	2.26	.50	5.14
5. Spatial Orientation	.83	1.90	.00	2.40	.53	5.77
6. Visualization	.75	1.95	.00	2.58	.57	6.68
7. Number Facility	1.50	2.90	.00	2.98	.66	8.98
8. Memory	6.16	5.30	7.00	1.89	.42	3.58
9. Verbal Comprehension	4.16	4.30	7.00	2.49	.55	6.22
10. Grammar	4.50	4.55	7.00	2.66	.59	7.10
11. Spelling	2.70	2.70	.00	2.67	.59	7.16
12. Expressional Fluency	4.25	4.45	7.00	2.37	.53	5.62
13. Ideational Fluency	3.16	3.00	.00	2.51	.56	6.31
14. Sensitivity to Problems	4.00	4.05	7.00	2.35	.52	5.52
15. Deductive Reasoning	3.00	3.15	3.00	2.30	.51	5.29
16. Inductive Reasoning	2.50	2.50	.00	2.25	.50	5.10
17. Originality	1.50	2.70	.00	2.73	.61	7.48
18. Social Intelligence	4.50	3.90	7.00	2.67	.59	7.14
19. Aesthetic Judgment	.40	1.90	.00	2.55	.57	6.51
20. Musical Aptitude	.08	.50	.00	1.60	.35	2.57
B. Psychomotor Attribute						
21. Control Precision	1.50	2.50	.00	2.42	.54	5.88
22. Multilimb Coordination	2.83	2.65	.00	2.53	.50	5.08
23. Reaction Time	3.83	3.60	.00	2.56	.57	6.56
24. Eye-Hand Coordination	3.16	3.10	4.00	2.22	.49	4.93
25. Manual Dexterity	2.16	2.95	.00	2.78	.62	7.73
26. Finger Dexterity	4.10	3.80	4.00	2.44	.54	5.95
27. Arm-Hand Steadiness	2.16	2.90	.00	2.63	.58	6.93
28. Explosive Strength	.08	.70	.00	2.03	.44	4.01
29. Static Strength	.12	.65	.00	1.69	.37	2.87
30. Dynamic Strength	.16	.80	.00	1.76	.39	3.11
31. Body Equilibrium	1.50	2.10	.00	2.31	.51	5.35
32. Stamina	.83	1.90	.00	2.36	.52	5.56
C. Sensory Capacity Attribute						
33. Near Visual Acuity	3.75	3.40	.00	2.90	.65	8.46
34. Far Visual Acuity	.83	1.90	.00	2.53	.56	6.41
35. Depth Perception	.75	1.70	.00	2.29	.51	5.27
36. Color Discrimination	.26	1.15	.00	1.83	.41	3.39
37. Auditory Acuity	5.83	4.85	7.00	2.39	.53	5.71
38. Tactual Discrimination	.21	1.20	.00	2.01	.45	4.06

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: General Secretary

Job Activity: Place outgoing calls.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	.40	1.35	.00	2.13	.47	4.55
2. Form Perception	.33	1.30	.00	2.02	.45	4.11
3. Perceptual Speed	1.00	2.10	.00	2.51	.56	6.30
4. Spatial Scanning	1.33	2.40	1.00	2.50	.55	6.26
5. Spatial Orientation	.33	1.00	.00	1.62	.36	2.63
6. Visualization	.40	1.25	.00	1.94	.43	3.77
7. Number Facility	1.16	2.75	.00	3.09	.69	9.56
8. Memory	5.16	4.70	7.00	2.27	.50	5.16
9. Verbal Comprehension	5.00	4.05	7.00	2.94	.65	8.68
10. Grammar	5.50	4.65	7.00	2.62	.58	6.81
11. Spelling	1.16	2.25	.00	2.59	.58	6.72
12. Expressional Fluency	5.50	4.70	7.00	2.38	.53	5.69
13. Ideational Fluency	1.83	2.30	.00	2.25	.50	5.06
14. Sensitivity to Problems	4.10	3.95	4.00	2.03	.45	4.15
15. Deductive Reasoning	2.16	2.60	.00	2.18	.48	4.71
16. Inductive Reasoning	2.50	2.35	.00	2.11	.47	4.45
17. Originality	2.16	2.50	.00	2.14	.47	4.57
18. Social Intelligence	3.83	3.65	7.00	2.47	.55	6.13
19. Aesthetic Judgment	.50	1.65	.00	2.11	.47	4.45
20. Musical Aptitude	.08	.30	.00	.92	.20	.85
B. Psychomotor Attribute						
21. Control Precision	2.50	2.55	.00	2.28	.51	5.20
22. Multilimb Coordination	2.83	2.65	3.00	1.66	.37	2.76
23. Reaction Time	3.00	3.15	2.00	2.23	.49	4.97
24. Eye-Hand Coordination	2.50	2.95	2.00	2.16	.48	4.68
25. Manual Dexterity	3.00	3.15	.00	2.72	.60	7.39
26. Finger Dexterity	4.16	4.05	3.00	2.13	.47	4.57
27. Arm-Hand Steadiness	1.75	2.55	.00	2.50	.55	6.26
28. Explosive Strength	.08	.35	.00	.98	.22	.97
29. Static Strength	.12	.50	.00	1.23	.27	1.52
30. Dynamic Strength	.16	.50	.00	1.92	.26	1.42
31. Body Equilibrium	1.16	1.65	.00	1.84	.41	3.39
32. Stamina	.70	1.30	.00	1.81	.40	3.29
C. Sensory Capacity Attribute						
33. Near Visual Acuity	3.50	3.55	7.00	2.66	.59	7.10
34. Far Visual Acuity	.90	1.55	.00	2.03	.45	4.15
35. Depth Perception	1.00	1.75	.00	2.07	.46	4.30
36. Color Discrimination	.26	.75	.00	1.20	.27	1.46
37. Auditory Acuity	4.75	3.90	7.00	2.80	.62	7.83
38. Tactual Discrimination	.26	1.35	1.00	2.13	.47	4.55

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: General Secretary

Job Activity: Schedule appointments for employer.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	.45	1.63	.00	2.26	.52	5.13
2. Form Perception	.36	1.52	.00	2.19	.50	4.81
3. Perceptual Speed	2.00	2.42	.00	2.50	.57	6.25
4. Spatial Scanning	3.58	2.84	.00	2.45	.56	6.02
5. Spatial Orientation	.29	1.36	.00	2.00	.46	4.02
6. Visualization	.29	1.36	.00	2.24	.51	5.02
7. Number Facility	1.00	2.05	.00	2.52	.58	6.38
8. Memory	4.08	4.21	4.00	2.01	.46	4.06
9. Verbal Comprehension	4.62	3.89	7.00	2.70	.62	7.32
10. Grammar	4.33	3.89	.00	2.60	.59	6.76
11. Spelling	4.00	3.47	.00	2.79	.64	7.81
12. Expressional Fluency	4.62	4.00	7.00	2.66	.61	7.11
13. Ideational Fluency	.87	1.89	.00	2.37	.54	5.65
14. Sensitivity to Problems	3.62	3.52	4.00	2.50	.57	6.26
15. Deductive Reasoning	2.33	2.68	.00	2.31	.53	5.33
16. Inductive Reasoning	1.37	2.00	.00	2.10	.48	4.44
17. Originality	1.00	1.94	.00	2.41	.55	5.83
18. Social Intelligence	3.00	3.10	.00	2.68	.61	7.21
19. Aesthetic Judgment	.36	1.47	.00	2.24	.51	5.04
20. Musical Aptitude	.02	.05	.00	.22	.05	.05
B. Psychomotor Attribute						
21. Control Precision	1.00	1.68	.00	2.05	.47	4.22
22. Multilimb Coordination	.45	1.31	.00	1.79	.41	3.22
23. Reaction Time	2.66	2.52	.00	2.27	.52	5.15
24. Eye-Hand Coordination	1.66	2.31	.00	2.45	.56	6.00
25. Manual Dexterity	.45	1.42	.00	2.06	.47	4.25
26. Finger Dexterity	2.25	2.36	.00	2.19	.50	4.80
27. Arm-Hand Steadiness	1.66	2.15	.00	2.29	.52	5.25
28. Explosive Strength	.09	.47	.00	1.26	.29	1.59
29. Static Strength	1.33	.57	.00	1.42	.32	2.03
30. Dynamic Strength	.13	.73	.00	1.91	.43	3.64
31. Body Equilibrium	.45	1.63	.00	2.26	.52	5.13
32. Stamina	.45	1.52	.00	2.29	.52	5.26
C. Sensory Capacity Attribute						
33. Near Visual Acuity	2.75	3.15	.00	2.65	.60	7.02
34. Far Visual Acuity	.36	1.47	.00	2.27	.52	5.15
35. Depth Perception	.45	1.47	.00	2.14	.49	4.59
36. Color Discrimination	.17	.94	.00	1.95	.44	3.83
37. Auditory Acuity	2.00	2.73	.00	2.84	.65	8.09
38. Tactual Discrimination	.23	.84	.00	1.53	.35	2.36

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: General Secretary

Job Activity: Greet visitors, ascertain nature of business, and conduct visitors to employer or appropriate person.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	.40	1.40	.00	2.25	.50	5.09
2. Form Perception	.33	1.65	.00	2.36	.53	5.60
3. Perceptual Speed	.33	1.65	.00	2.30	.51	5.29
4. Spatial Scanning	.33	1.30	.00	1.92	.43	3.69
5. Spatial Orientation	2.50	2.70	.00	2.61	.58	6.85
6. Visualization	1.50	2.15	.00	2.32	.51	5.39
7. Number Facility	.50	1.55	.00	2.37	.53	5.62
8. Memory	4.50	5.10	7.00	1.83	.41	3.35
9. Verbal Comprehension	6.00	5.45	7.00	1.73	.38	2.99
10. Grammar	6.10	4.85	7.00	2.68	.59	7.18
11. Spelling	1.50	3.35	.00	3.16	.70	10.02
12. Expressional Fluency	6.16	5.25	7.00	2.22	.49	4.93
13. Ideational Fluency	3.00	3.05	.00	2.52	.56	6.36
14. Sensitivity to Problems	4.16	4.45	7.00	1.93	.43	3.73
15. Deductive Reasoning	3.10	3.20	3.00	2.14	.47	4.58
16. Inductive Reasoning	2.00	2.65	1.00	2.39	.53	5.71
17. Originality	3.16	3.35	2.00	2.25	.50	5.08
18. Social Intelligence	5.00	4.80	7.00	2.23	.50	5.01
19. Aesthetic Judgment	.50	1.65	.00	2.34	.52	5.50
20. Musical Aptitude	.02	.05	.00	.22	.05	.05
B. Psychomotor Attribute						
21. Control Precision	.40	1.40	.00	1.95	.43	3.83
22. Multilimb Coordination	2.50	2.65	.00	2.05	.46	4.23
23. Reaction Time	3.16	3.30	.00	2.63	.59	6.95
24. Eye-Hand Coordination	2.50	2.80	.00	2.52	.56	6.37
25. Manual Dexterity	.83	1.90	.00	2.29	.51	5.25
26. Finger Dexterity	1.00	2.10	.00	2.42	.54	5.88
27. Arm-Hand Steadiness	1.16	1.90	.00	2.24	.50	5.04
28. Explosive Strength	.05	.30	.00	.97	.21	.95
29. Static Strength	.12	.65	.00	1.56	.35	2.45
30. Dynamic Strength	.26	.95	.00	1.63	.36	2.68
31. Body Equilibrium	1.16	2.10	.00	2.38	.53	5.67
32. Stamina	.83	1.50	.00	1.87	.42	3.52
C. Sensory Capacity Attribute						
33. Near Visual Acuity	2.50	3.05	.00	2.68	.60	7.20
34. Far Visual Acuity	2.10	2.50	.00	2.21	.49	4.89
35. Depth Perception	.50	1.80	.00	2.50	.51	5.32
36. Color Discrimination	.33	1.25	.00	2.07	.46	4.30
37. Auditory Acuity	3.50	3.70	7.00	2.79	.62	7.80
38. Tactual Discrimination	.40	1.50	.00	2.11	.47	4.47

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: General Secretary

Job Activity: Take dictation

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	.19	.61	.00	1.65	.38	2.72
2. Form Perception	.40	1.11	.00	1.87	.44	3.51
3. Perceptual Speed	1.10	2.16	.00	2.57	.60	6.61
4. Spatial Scanning	.25	1.22	.00	2.29	.54	5.24
5. Spatial Orientation	.25	1.33	.00	2.52	.59	6.35
6. Visualization	.31	.94	.00	1.83	.43	3.35
7. Number Facility	.31	1.11	.00	2.05	.48	4.22
8. Memory	4.00	3.77	.00	2.64	.62	7.00
9. Verbal Comprehension	5.00	4.44	7.00	2.57	.60	6.61
10. Grammar	6.00	4.88	7.00	2.69	.63	7.28
11. Spelling	5.83	4.[illegible]2	7.00	2.71	.64	7.38
12. Expressional Fluency	3.00	3.44	7.00	2.81	.66	7.90
13. Ideational Fluency	1.16	1.77	.00	1.83	.43	3.35
14. Sensitivity to Problems	1.16	2.22	.00	2.53	.59	6.41
15. Deductive Reasoning	1.50	2.27	.00	2.58	.60	6.68
16. Inductive Reasoning	.70	1.72	.00	2.42	.57	5.85
17. Originality	.75	1.77	.00	2.39	.56	5.71
18. Social Intelligence	.40	1.72	.00	2.58	.60	6.68
19. Aesthetic Judgment	.14	.66	.00	1.71	.40	2.94
20. Musical Aptitude	.02	.05	.00	2.23	.05	.05
B. Psychomotor Attribute						
21. Control Precision	.40	1.83	.00	2.61	.61	6.85
22. Multilimb Coordination	.40	1.94	.00	2.66	.62	7.11
23. Reaction Time	4.16	3.72	7.00	3.02	.71	9.15
24. Eye-Hand Coordination	3.50	3.50	.00	2.74	.64	7.55
25. Manual Dexterity	1.76	2.11	.00	2.44	.57	5.98
26. Finger Dexterity	4.75	3.83	7.00	2.91	.68	8.50
27. Arm-Hand Steadiness	4.16	3.61	.00	2.85	.67	8.13
28. Explosive Strength	.02	.05	.00	.23	.05	.05
29. Static Strength	.02	.05	.00	.23	.05	.05
30. Dynamic Strength	.10	.44	.00	1.42	.33	2.02
31. Body Equilibrium	.40	1.50	.00	2.12	.50	4.50
32. Stamina	.90	1.61	.00	1.91	.45	3.66
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.00	3.55	.00	2.97	.70	8.85
34. Far Visual Acuity	.31	.94	.00	1.83	.43	3.35
35. Depth Perception	.50	1.66	.00	2.37	.56	5.64
36. Color Discrimination	.10	.55	.00	1.68	.39	2.85
37. Auditory Acuity	4.50	3.88	.00	2.92	.69	8.57
38. Tactual Discrimination	.14	.72	.00	1.84	.43	3.38

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: General Secretary

Job Activity: Arrange travel schedule and reservations.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	.23	1.31	.00	2.45	.56	6.00
2. Form Perception	.36	1.78	.00	2.63	.60	6.95
3. Perceptual Speed	1.75	2.73	.00	2.92	.67	8.53
4. Spatial Scanning	2.25	2.57	.00	2.52	.57	6.36
5. Spatial Orientation	.29	1.31	.00	2.31	.53	5.33
6. Visualization	.36	1.42	.00	2.06	.47	4.25
7. Number Facility	1.33	2.47	.00	2.73	.62	7.48
8. Memory	3.62	3.52	.00	2.50	.57	6.26
9. Verbal Comprehension	5.00	4.15	7.00	2.77	.63	7.69
10. Grammar	4.75	3.89	7.00	2.93	.67	8.54
11. Spelling	3.25	3.52	.00	2.95	.67	8.70
12. Expressional Fluency	5.62	4.52	7.00	2.67	.61	7.15
13. Ideational Fluency	1.80	2.31	.00	2.54	.58	6.45
14. Sensitivity to Problems	4.12	3.89	4.00	2.42	.55	5.87
15. Deductive Reasoning	3.33	3.05	4.00	2.06	.47	4.27
16. Inductive Reasoning	1.00	2.05	.00	2.41	.55	5.83
17. Originality	.60	1.21	.00	1.81	.41	3.28
18. Social Intelligence	3.25	3.10	.00	2.62	.60	6.87
19. Aesthetic Judgment	.13	.63	.00	1.70	.39	2.91
20. Musical Aptitude	.05	.10	.00	.31	.07	.09
B. Psychomotor Attribute						
21. Control Precision	.75	.94	.00	1.02	.23	1.05
22. Multilimb Coordination	.75	1.36	.00	1.80	.41	3.24
23. Reaction Time	1.75	2.52	.00	2.65	.60	7.04
24. Eye-Hand Coordination	2.25	2.68	.00	.60	2.62	6.89
25. Manual Dexterity	.36	1.10	.00	1.48	.34	2.21
26. Finger Dexterity	1.33	2.00	.00	2.16	.49	4.66
27. Arm-Hand Steadiness	2.33	2.31	.00	2.05	.47	4.22
28. Explosive Strength	.05	.42	.00	1.30	.29	1.70
29. Static Strength	.09	.42	.00	1.21	.27	1.48
30. Dynamic Strength	.17	.78	.00	1.47	.33	2.17
31. Body Equilibrium	.75	1.52	.00	1.77	.40	3.15
32. Stamina	.91	1.47	.00	1.74	.40	3.04
C. Sensory Capacity Attribute						
33. Near Visual Acuity	2.75	3.00	.00	2.80	.64	7.88
34. Far Visual Acuity	.29	.89	.00	1.79	.41	3.21
35. Depth Perception	.36	1.05	.00	1.74	.40	3.05
36. Color Discrimination	.17	1.05	.00	1.92	.44	3.71
37. Auditory Acuity	3.75	3.26	.00	2.92	.67	8.53
38. Tactual Discrimination	.13	.42	.00	.90	.20	.81

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: General Secretary

Job Activity: Compile and type statistical reports.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	2.66	2.89	.00	2.84	.65	8.09
2. Form Perception	4.00	3.68	.00	2.96	.68	8.78
3. Perceptual Speed	6.00	5.36	7.00	2.00	.46	4.023
4. Spatial Scanning	5.60	4.84	6.00	2.31	.53	5.36
5. Spatial Orientation	.75	2.31	.00	2.84	.65	8.11
6. Visualization	.75	2.21	.00	2.69	.61	7.28
7. Number Facility	6.33	5.52	7.00	2.06	.47	4.26
8. Memory	4.18	4.57	4.00	2.66	.47	4.25
9. Verbal Comprehension	3.33	3.78	7.00	2.74	.62	7.50
10. Grammar	4.40	4.42	7.00	2.50	.57	6.25
11. Spelling	5.66	4.84	7.00	2.50	.57	6.25
12. Expressional Fluency	4.25	3.84	7.00	2.83	.65	8.02
13. Ideational Fluency	1.40	2.73	.00	2.72	.62	7.42
14. Sensitivity to Problems	3.12	3.36	.00	2.65	.60	7.02
15. Deductive Reasoning	4.25	4.15	4.00	2.50	.57	6.25
16. Inductive Reasoning	3.87	3.52	.00	2.61	.59	6.81
17. Originality	3.85	3.42	.00	2.89	.66	8.36
18. Social Intelligence	1.66	2.68	.00	3.00	.68	9.00
19. Aesthetic Judgment	.45	2.21	.00	2.63	.66	6.95
20. Musical Aptitude	.09	.21	.00	.53	.12	.09
B. Psychomotor Attribute						
21. Control Precision	3.00	2.89	.00	2.55	.58	6.54
22. Multilimb Coordination	3.75	3.31	4.00	2.40	.55	5.78
23. Reaction Time	4.20	4.05	4.00	2.46	.56	6.05
24. Eye-Hand Coordination	4.12	3.84	4.00	2.34	.53	5.47
25. Manual Dexterity	1.00	1.94	.00	2.29	.52	5.27
26. Finger Dexterity	5.00	4.57	6.00	2.19	.50	4.81
27. Arm-Hand Steadiness	4.80	4.36	5.00	2.38	.54	5.69
28. Explosive Strength	.13	1.00	.00	2.08	.47	4.33
29. Static Strength	.23	.94	.00	1.68	.38	2.83
30. Dynamic Strength	.17	.84	.00	1.64	.37	2.69
31. Body Equilibrium	2.00	2.10	.00	2.15	.49	4.65
32. Stamina	2.00	2.42	1.00	2.03	.46	4.14
C. Sensory Capacity Attribute						
33. Near Visual Acuity	5.80	5.42	7.00	1.61	.36	2.59
34. Far Visual Acuity	.36	1.26	.06	2.15	.49	4.64
35. Depth Perception	1.00	1.94	.00	2.32	.53	5.38
36. Color Discrimination	.36	1.84	.00	2.56	.58	6.58
37. Auditory Acuity	.45	1.41	.00	2.14	.49	4.59
38. Tactual Discrimination	.23	1.21	.00	2.09	.48	4.39

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: General Secretary

Job Activity: Supervise clerical workers.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	1.16	2.50	.00	2.79	.65	7.79
2. Form Perception	.50	1.88	.00	2.44	.57	5.98
3. Perceptual Speed	2.50	2.94	.00	2.71	.63	7.35
4. Spatial Scanning	1.50	2.50	.00	2.64	.62	6.97
5. Spatial Orientation	2.50	2.55	.00	2.52	.59	6.37
6. Visualization	.83	2.27	.00	2.80	.66	7.85
7. Number Facility	1.50	2.27	.00	2.56	.60	6.56
8. Memory	4.50	4.66	7.00	2.11	.49	4.47
9. Verbal Comprehension	6.25	5.61	7.00	1.31	.41	3.07
10. Grammar	5.83	5.16	7.00	1.97	.46	3.91
11. Spelling	5.50	4.50	7.00	2.59	.61	6.73
12. Expressional Fluency	6.10	5.66	7.00	1.53	.36	2.35
13. Ideational Fluency	5.75	5.23	7.00	1.92	.45	3.71
14. Sensitivity to Problems	6.25	5.55	7.00	1.82	.42	3.32
15. Deductive Reasoning	4.66	4.22	5.00	2.04	.48	4.18
16. Inductive Reasoning	3.33	3.61	3.00	2.53	.53	5.07
17. Originality	4.50	4.44	7.00	2.22	.52	4.96
18. Social Intelligence	5.83	5.27	7.00	1.93	.45	3.74
19. Aesthetic Judgment	1.50	2.44	.00	2.79	.65	7.79
20. Musical Aptitude	.14	.55	.00	1.33	.31	1.79
B. Psychomotor Attribute						
21. Control Precision	1.83	2.50	.00	2.77	.65	7.67
22. Multilimb Coordination	2.50	2.72	.00	2.39	.56	5.74
23. Reaction Time	3.50	3.55	7.00	2.70	.63	7.30
24. Eye-Hand Coordination	2.83	3.11	.00	2.63	.62	6.92
25. Manual Dexterity	2.50	2.44	.00	2.20	.51	4.85
26. Finger Dexterity	2.70	2.61	.00	2.50	.58	6.25
27. Arm-Hand Steadiness	2.22	2.22	.00	2.43	.57	5.94
28. Explosive Strength	.14	.50	.00	1.15	.27	1.32
29. Static Strength	.25	.88	.00	1.49	.35	2.22
30. Dynamic Strength	.40	1.22	.00	1.83	.43	3.35
31. Body Equilibrium	1.50	2.33	.00	2.44	.57	6.00
32. Stamina	3.50	3.27	5.00	2.29	.59	5.27
C. Sensory Capacity Attribute						
33. Near Visual Acuity	3.75	3.61	4.00	2.54	.60	6.48
34. Far Visual Acuity	2.83	2.83	.00	2.55	.60	6.50
35. Depth Perception	.66	1.94	.00	2.53	.61	6.43
36. Color Discrimination	.20	1.05	.00	2.07	.50	4.30
37. Auditory Acuity	4.50	4.22	.00	2.48	.58	6.18
38. Tactual Discrimination	.25	1.00	.00	2.27	.44	3.52

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: General Secretary

Job Activity: Keep personnel records.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	1.25	2.15	.00	2.52	.57	6.36
2. Form Perception	2.00	2.47	.00	2.67	.61	7.15
3. Perceptual Speed	2.40	3.15	.00	2.67	.61	7.14
4. Spatial Scanning	3.33	3.31	.00	2.77	.63	7.67
5. Spatial Orientation	.75	1.63	.00	2.14	.49	4.57
6. Visualization	.75	1.84	.00	2.26	.52	5.14
7. Number Facility	3.25	3.31	.00	2.62	.60	6.89
8. Memory	4.42	4.68	4.00	2.00	.45	4.00
9. Verbal Comprehension	4.41	4.63	7.00	2.24	.51	5.02
10. Grammar	4.87	4.83	7.00	2.08	.47	4.36
11. Spelling	4.75	4.57	7.00	2.43	.5[illegible]	5.92
12. Expressional Fluency	4.41	4.52	4.00	2.29	.5[illegible]	5.26
13. Ideational Fluency	3.26	3.26	.00	2.86	.65	8.20
14. Sensitivity to Problems	4.12	4.21	7.00	2.50	.57	6.28
15. Deductive Reasoning	3.33	3.26	.00	2.33	.53	5.42
16. Inductive Reasoning	2.37	2.68	.00	2.18	.50	4.78
17. Originality	2.33	2.73	.00	2.33	.53	5.42
18. Social Intelligence	4.20	4.31	.00	1.73	.49	3.00
19. Aesthetic Judgment	1.57	1.57	.00	2.16	.39	4.70
20. Musical Aptitude	.09	.36	.00	1.01	.23	1.02
B. Psychomotor Attribute						
21. Control Precision	.45	1.52	.00	1.89	.43	3.59
22. Multilimb Coordination	1.75	2.00	.00	1.94	.44	5.77
23. Reaction Time	2.75	2.63	4.00	2.06	.47	4.24
24. Eye-Hand Coordination	3.00	2.89	4.00	1.99	.45	3.98
25. Manual Dexterity	.45	1.94	.00	2.34	.53	5.49
26. Finger Dexterity	3.37	3.10	.00	2.15	.49	4.65
27. Arm-Hand Steadiness	3.00	2.78	.00	2.39	.54	5.73
28. Explosive Strength	.17	.89	.00	1.88	.43	3.54
29. Static Strength	.13	.94	.00	1.95	.44	3.83
30. Dynamic Strength	.23	1.00	.00	1.76	.40	3.11
31. Body Equilibrium	.75	1.52	.00	1.89	.43	3.59
32. Stamina	1.12	2.00	.00	2.13	.49	4.55
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.37	4.31	4.00	2.23	.51	5.00
34. Far Visual Acuity	1.37	2.05	.00	2.17	.49	4.71
35. Depth Perception	1.00	1.84	.00	2.26	.52	5.14
36. Color Discrimination	.36	1.84	.00	2.45	.56	6.02
37. Auditory Acuity	.75	1.78	.00	2.27	.52	5.17
38. Tactual Discrimination	.23	1.00	.00	1.66	.38	2.77

STATISTICAL SCORES OF HUMAN ATTRIBUTES FOR JOB ACTIVITIES

Occupation: General Secretary

Job Activity: Record minutes of staff meetings.

Human Attributes	Median	Mean	Mode	Stand. Devia.	Stand. Error	Variance
A. Cognitive Attribute						
1. Closure	.36	1.00	.00	1.59	.36	2.55
2. Form Perception	.36	1.47	.00	2.14	.67	4.59
3. Perceptual Speed	4.00	3.52	.00	2.93	.49	8.59
4. Spatial Scanning	1.25	2.10	.00	2.44	.56	5.98
5. Spatial Orientation	.36	1.10	.00	1.52	.35	2.32
6. Visualization	.36	1.42	.00	2.06	.47	4.25
7. Number Facility	.87	1.52	.00	1.83	.42	3.37
8. Memory	5.12	4.73	7.00	2.20	.50	4.87
9. Verbal Comprehension	5.91	5.00	6.00	2.47	.56	6.11
10. Grammar	5.91	4.94	6.00	2.48	.57	6.16
11. Spelling	6.00	4.89	7.00	2.60	.59	6.76
12. Expressional Fluency	4.60	4.00	5.00	2.35	.54	5.55
13. Ideational Fluency	2.33	2.31	.00	2.00	.45	4.00
14. Sensitivity to Problems	2.87	2.63	.00	2.31	.53	5.35
15. Deductive Reasoning	1.25	2.15	.00	2.31	.53	5.36
16. Inductive Reasoning	.75	1.47	.00	1.95	.44	3.81
17. Originality	1.00	1.68	.00	2.08	.47	4.33
18. Social Intelligence	2.50	2.50	.00	2.52	.59	6.38
19. Aesthetic Judgment	.36	1.26	.00	2.13	.48	4.53
20. Musical Aptitude	.28	.10	.00	.45	.10	.21
B. Psychomotor Attribute						
21. Control Precision	.45	1.52	.00	1.89	.43	3.59
22. Multilimb Coordination	2.00	2.36	.00	2.36	.54	5.57
23. Reaction Time	3.80	3.36	.00	2.73	.62	7.46
24. Eye-Hand Coordination	4.00	3.52	.00	2.50	.57	6.26
25. Manual Dexterity	.29	1.42	.00	2.11	.48	4.48
26. Finger Dexterity	4.00	3.42	.00	2.47	.56	6.14
27. Arm-Hand Steadiness	2.57	2.57	.00	2.56	.58	6.59
28. Explosive Strength	.05	.36	.00	1.11	.25	1.24
29. Static Strength	.13	.47	.00	1.02	.23	1.04
30. Dynamic Strength	.17	.89	.00	1.76	.40	3.09
31. Body Equilibrium	.75	1.78	.00	2.25	.51	5.06
32. Stamina	1.00	1.63	.00	1.80	.41	3.24
C. Sensory Capacity Attribute						
33. Near Visual Acuity	4.00	3.84	6.00	2.47	.56	6.14
34. Far Visual Acuity	.87	1.52	.00	1.92	.44	3.70
35. Depth Perception	.36	.94	.00	1.43	.32	2.05
36. Color Discrimination	.13	.31	.00	.67	.15	.45
37. Auditory Acuity	4.66	3.94	7.00	2.81	.64	7.94
38. Tactual Discrimination	.23	.73	.00	1.44	.33	2.09

APPENDIX R

OCCUPATION-BY-ATTRIBUTE PROFILES FOR THE THREE OCCUPATIONS

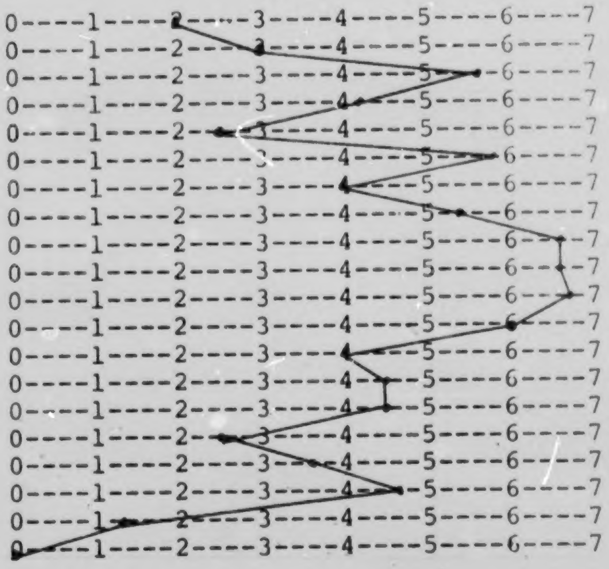
Profile of Human Attribute-by-Occupation

Occupation: General Secretary

Human Attributes — Rating Scale

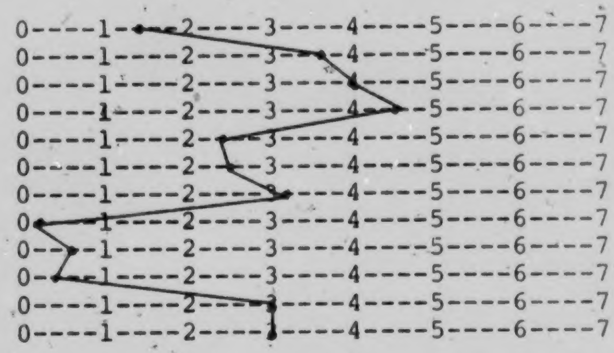
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



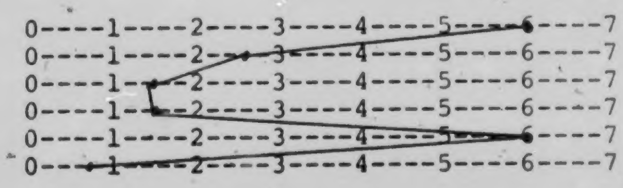
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

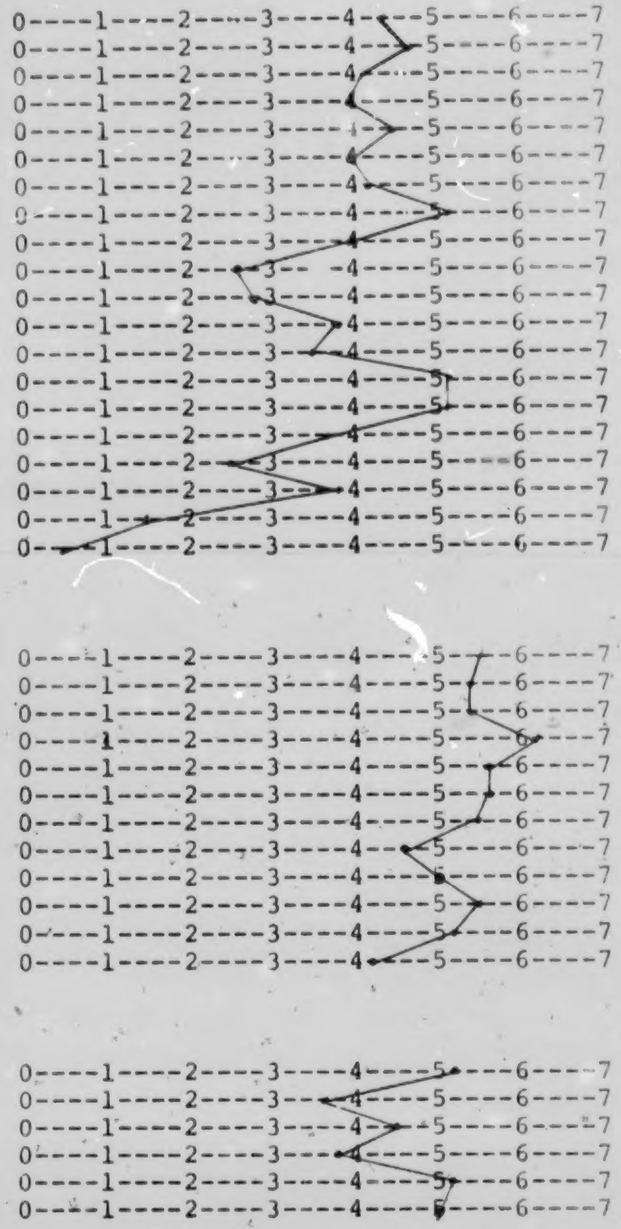
33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



Profile of Human Attribute-by-Occupation

Occupation: Automotive Mechanic

Human Attributes — **Rating Scale**



A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

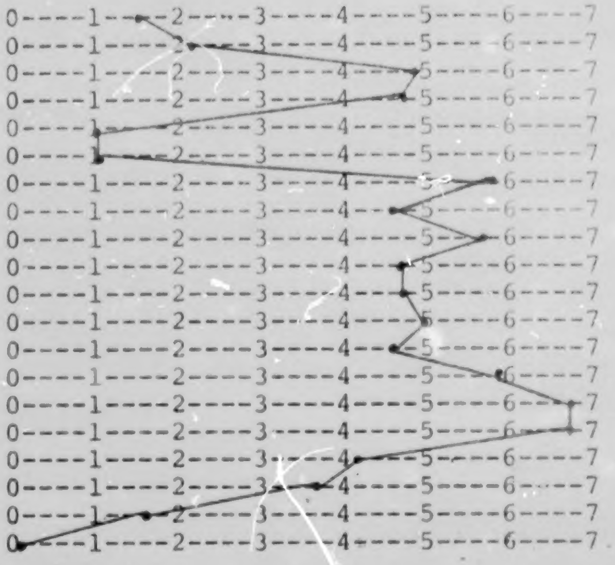
33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

Profile of Human Attribute-by-Occupation

Occupation: Business Data Programmer

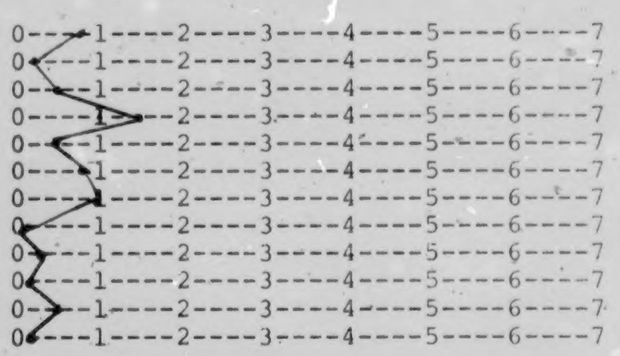
Human Attributes | **Rating Scale**

A. Cognitive Attribute



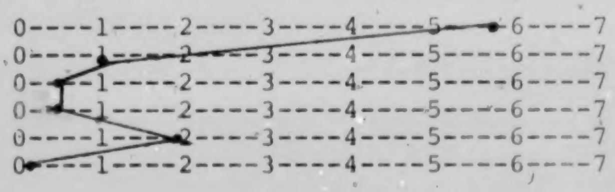
1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute



21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute



33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

APPENDIX S

JOB-ACTIVITY-BY-ATTRIBUTE MATRICES FOR THE THREE OCCUPATIONS: GENERAL SECRETARY, AUTOMOTIVE MECHANIC AND BUSINESS DATA PROGRAMMER

CLOSURE

The attribute of closure was defined as follows:

Attribute	Definition	Activities
1. Closure	organize a disorganized or an obscure visual field into a single impression, with or without knowledge of any of the specific forms contained in the field.	examine structure/patterns using an instrument; inspect or investigate shapes/designs for background detail.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	70%
General Secretary:	5%
Business Data Programmer:	0%

Matrix 1 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 1

Attribute: Closure

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X	X		X	X	X	X	X	X	X		X			X		X	
General Secretary		X																
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

FORM PERCEPTION

The attribute of form perception was defined as follows:

Attribute	Definition	Activities
2. Form Perception	identify relevant details in objects or in graphic material; make fine visual comparisons; and discriminate among characteristics such as shapes and shadings of figures or objects and widths and lengths of lines.	paint designs on surfaces; compare finite objects for similarities and differences.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	76%
General Secretary:	5%
Business Data Programmer:	0%

Matrix 2 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 2

Attribute: Form Perception

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X	X		X	X	X	X	X	X	X	X	X			X		X	
General Secretary															X			
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

PERCEPTUAL SPEED

The attribute of perceptual speed was defined as follows:

Attribute	Definition	Activities
3. Perceptual Speed	rapidly identify details in verbal or tabular material and rapidly perform simple visual discrimination tasks; discriminate between symbols, detecting differences in copy, etc.	check a proof against the original copy; transpose information from printed matter into a machine.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	52%
General Secretary:	50%
Business Data Programmer:	66%

Matrix 3 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 3

Attribute: Perceptual Speed

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X	X		X			X		X	X		X			X		X	
General Secretary	X	X	X	X	X	X	X								X		X	
*Business Data Programmer	X	X		X	X		X	X		X		X						

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

SPATIAL SCANNING

The attribute of spatial scanning was defined as follows:

Attribute	Definition	Activities
4. Spatial Scanning	identify or detect objects quickly from a wide or complicated visual field.	look for objects on a large visual surface; identify quickly numbers ending in five in a table.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	82%
General Secretary:	27%
Business Data Programmer:	41%

Matrix 4 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 4

Attribute: Spatial Scanning

Occupations	Job Activities 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X	X	X	X	X	X	X		X	X	X	X		X	X		X	
General Secretary		X				X	X				X				X			
*Business Data Programmer			X	X		X	X	X										

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

SPATIAL ORIENTATION

The attribute of spatial orientation was defined as follows:

Attribute	Definition	Activities
5. Spatial Orientation	identify area patterns and orient oneself in relation to the position and form of surrounding objects.	conduct a tour; drive an automobile.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	70%
General Secretary:	0%
Business Data Programmer:	0%

Matrix 5 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 5

Attribute: Spatial Orientation

Occupations	Job Activities 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X	X	X	X			X	X	X	X	X	X	X				X	
General Secretary																		
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

VISUALIZATION

The attribute of VISUALIZATION was defined as follows:

Attribute	Definition	Activities
6. Visualization	identify area patterns in two or three dimensions and convert them into other area patterns; demonstrate the ability to visualize objects of two or three dimensions; and analyze outlines in geometric forms.	use a mirror to visualize and manipulate objects; sketch designs for a pattern.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic: 64%

General Secretary: 0%

33%

Business Data Programmer: 33%

Matrix 6 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 6

Attribute: Visualization

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X	X		X	X	X	X	X	X	X		X			X		X	
General Secretary																		
*Business Data Programmer			X	X		X						X						

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

NUMBER FACILITY

The attribute of number facility was defined as follows:

Attribute	Definition	Activities
7. Number Facility	calculate numbers rapidly and accurately using operations, such as addition, subtraction, multiplication, and division; count, plot on numbered coordinates, etc.	compute scale representations of objects; add and subtract debits and credits; compute the answer to an arithmetic problem.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	47%
General Secretary:	5%
Business Data Programmer:	75%

Matrix 7 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 7

Attribute: Number Facility

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X	X			X	X	X	X	X	X		X						
General Secretary																		
*Business Data Programmer	X	X	X	X	X		X	X		X		X						

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

MEMORY

The attribute of memory was defined as follows:

Attribute	Definition	Activities
8. Memory	reproduce/recall pertinent learned information perfectly within a specified period of time (one minute to eight hours).	give a speech from memory; remember dispatched addresses.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	77%
General Secretary:	100%
Business Data Programmer:	100%

Matrix 8 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 8

Attribute: Memory

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X	X	X	X	X	X	X	X	X	X	X	X			X		X	
General Secretary	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
*Business Data Programmer	X	X	X	X	X	X	X	X	X	X	X	X						

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

VERBAL COMPREHENSION

The attribute of verbal comprehension was defined as follows:

Attribute	Definition	Activities
9. Verbal Comprehension	define the meanings of words and the ideas associated with them, and use them effectively; interpret language, identify relationships between words, and deduce meanings of whole sentences and paragraphs.	review written communication; prepare correspondence, write an article; prepare a presentation.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	11%
General Secretary:	88%
Business Data Programmer:	83%

Matrix 9 presents the data for those job activities rated by respondents as either necessary and/or important to demonstrate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 9

Attribute: Verbal Comprehension

Occupations	Job Activities 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X	X																
General Secretary	X	X	X	X	X	X		X	X	X	X	X	X	X		X		X
*Business Data Programmer	X	X	X	X		X		X	X	X	X	X						

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

GRAMMAR

The attribute of grammar was defined as follows:

Attribute	Definition	Activities
10. Grammar	utilize forms and structures of words and their general arrangement in phrases and sentences.	check a manuscript; read printed material for accuracy/correctness.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	11%
General Secretary:	88%
Business Data Programmer:	33%

Matrix 10 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 10

Attribute: Grammar

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X	X																
General Secretary	X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X
*Business Data Programmer		X		X					X		X							

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

SPELLING

The attribute of spelling was defined as follows:

Attribute	Definition	Activities
11. Spelling	use letters properly to form words; distinguish between correctly spelled and misspelled words.	check typed material; read printed material for accuracy/correctness; prepare a paper.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	11%
General Secretary:	77%
Business Data Programmer:	50%

Matrix 11 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 11

Attribute: Spelling

Occupations	Job Activities 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X	X																
General Secretary	X	X	X	X	X	X	X	X			X		X		X	X	X	X
*Business Data Programmer		X	X	X					X		X	X						

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

EXPRESSIONAL FLUENCY

The attribute of expressional fluency was defined as follows:

Attribute	Definition	Activities
12. Expressional Fluency	translate ideas into words rapidly, especially in oral or written exchange. Expressional fluency differs from ideational fluency (below) in that expressional fluency does not involve coming up with ideas (as does ideational fluency) but, rather, the verbal expression of these ideas.	question an individual; respond to questions rapidly; write a report.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	11%
General Secretary:	77%
Business Data Programmer:	58%

Matrix 12 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 12

Attribute: Expressional Fluency

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X	X																
General Secretary			X	X	X	X		X	X	X	X	X		X	X	X	X	X
*Business Data Programmer	X	X		X					X	X	X	X						

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

221

IDEATIONAL FLUENCY

The attribute of ideational fluency was defined as follows:

Attribute	Definition	Activities
13. Ideational Fluency	express creative ideas rapidly about a given topic where quantity rather than quality of ideas is stressed (for example, producing as many ideas as possible about a given topic in five minutes).	throw out ideas for consideration; give suggestions for a new mailing strategy; suggest style changes in products/goods.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	5%
General Secretary:	22%
Business Data Programmer:	66%

Matrix 13 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 13

Attribute: Ideational Fluency

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X																	
General Secretary					X	X		X								X		
*Business Data Programmer	X	X		X				X	X	X	X	X						

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

SENSITIVITY TO PROBLEMS

The attribute of sensitivity to problems was defined as follows:

Attribute	Definition	Activities
14. Sensitivity to Problems	identify practical problems (for example, improvements that could be made in electrical appliances, etc.); deficiencies in courses of action or organizational plans (for example, why a road should not be repaved when it would have to be torn up in the near future to install new sewer pipes); or recognize implications of activities (for example, if the activity is building a dog house, the ability to infer that the entrance must be large enough to accommodate the dog, that the roof should be slanted so that rain will run off, that the entrance should be pointed away from the normal direction of the wind, etc.).	anticipate problems that could arise on a trip; investigate decreasing production of products/goods.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	75%
General Secretary:	55%
Business Data Programmer:	100%

Matrix 14 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 14

Attribute: Sensitivity to Problems

Occupations	Job Activities 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X	X		X	X	X	X	X	X	X	X	X					X	
General Secretary					X	X		X	X	X	X	X		X		X	X	
*Business Data Programmer	X	X	X	X	X	X	X	X	X	X	X	X						

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

DEDUCTIVE REASONING

The attribute of deductive reasoning was defined as follows:

Attribute	Definition	Activities
15. Deductive Reasoning	examine given premises and reason those premises to their necessary conclusion. For example, given: "All holidays are paid and no Sundays are paid," the ability to deduce that "No Sundays are holidays."	solve a complex problem; solve an arithmetic/mathematical problem.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic: 70%

General Secretary: 33%

Business Data Programmer: 100%

Matrix 15 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 15

Attribute: Deductive Reasoning

Occupations	Job Activities 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X	X		X	X	X	X	X	X	X	X	X					X	
General Secretary		X			X	X		X										
*Business Data Programmer	X	X	X	X	X	X	X	X	X	X	X	X						

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

INDUCTIVE REASONING

The attribute of inductive reasoning was defined as follows:

Attribute	Definition	Activities
16. Inductive Reasoning	identify/express/write general concepts (giving structure and meaning to the information from given specific sets of information; that is, produce a general concept, principle, or rule to explain a set of specific instances. This factor is tested for by requiring the examinee to derive a principle from a number of particular instances. (For example, given the nonsense syllables ABC, MNO, XYZ, PQS, GHI, to discover that PQS is different from the others, since the rule for the formation of the others is alphabetical order). Note basic differences and relationships among symbols, figures, and figure patterns (usually measured through the use of figure diagrams arranged according to some principle).	decode a secret message; develop a theory to explain research findings

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic: 41%

General Secretary: 5%

Business Data Programmer: 100%

Matrix 16 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 16

Attribute: Inductive Reasoning

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X	X				X	X		X	X		X						
General Secretary															X			
*Business Data Programmer	X	X	X	X	X	X	X	X	X	X	X	X						

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

ORIGINALITY

The attribute of orginality was defined as follows:

Attribute	Definition	Activities
17. Originality	produce/express responses or ideas which are either clever or uncommon. For example, produce clever titles to story plots or produce novel consequences of a hypothetical situation (such as what if everyone went blind).	think of unusual names for products; produce a new title for a program; think of novel ways to make money.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	5%
General Secretary:	16%
Business Data Programmer:	50%

Matrix 17 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 17

Attribute: Orginality

Occupations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic		X																
General Secretary					X										X	X		
*Business Data Programmer	X	X	X	X		X				X		X						

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

SOCIAL INTELLIGENCE

The attribute of social intelligence was defined as follows:

Attribute	Definition	Activities
18. Social Intelligence	identify/examine/interpret correctly behavioral information obtained through friendly interaction; identify the behavioral indicators of attention, thoughts, desires, moods, emotions, intentions, etc. (behavioral indicators include such behaviors as gestures, postures, actions, expressions, voice inflections, etc.).	work with senior citizens; vary selling approach according to customer reaction; supervise subordinates.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	11%
General Secretary:	33%
Business Data Programmer:	8%

Matrix 18 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 18

Attribute: Social Intelligence

Occupations	Job Activities 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X	X																
General Secretary								X	X	X		X				X	X	
*Business Data Programmer		X																

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

AESTHETIC JUDGMENT

The attribute of aesthetic judgment was defined as follows:

Attribute	Definition	Activities
19. Aesthetic Judgment	analyze/determine the compositional organization of art objects on the basis of considering differences in unity, proportion, form, color, and design.	assess the quality of a design; determine the value of antique artifacts.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	5%
General Secretary:	0%
Business Data Programmer:	0%

Matrix 19 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 19

Attribute: Aesthetic Judgment

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic		X																
General Secretary																		
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

MUSICAL APTITUDE

The attribute of musical aptitude was defined as follows:

Attribute	Definition	Activities
20. Musical Aptitude	combine sensory, psychomotor, and cognitive capabilities necessary to produce musical expression (with voice or instrument). These capacities include using the sense of pitch, rhythm, time, and tonal memory.	keep in tune/time with musical notes; play a melody on a musical instrument; sing a song in a choral group.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic: 0%

General Secretary: 0%

Business Data Programmer: 0%

Matrix 20 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 19

Attribute: Musical Aptitude

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic																		
General Secretary																		
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

CONTROL PRECISION

The attribute of control precision was defined as follows:

Attribute	Definition	Activities
21. Control Precision	adjust the position of a control mechanism (such as joysticks, levers, pedals, rudders, etc.) using rapid, precise, controlled muscular movements.	place in position a building section; operate a lever to control movement of a vehicle.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	94%
General Secretary:	11%
Business Data Programmer:	0%

Matrix 21 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 21

Attribute: Control Precision

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
General Secretary				X		X												
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

MULTILIMB COORDINATION

The attribute of multilimb coordination was defined as follows:

Attribute	Definition	Activities
22. Multilimb Coordination	use more than one limb (both hands, both feet, or hands and feet, simultaneously, in coordinated manner.	operate manual components of instruments; participate in (recreational activities) active sports

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	88%
General Secretary:	22%
Business Data Programmer:	0%

Matrix 22 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 22

Attribute: Multilimb Coordination

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X		X	X	X	X	X	X	X	X	X	X	X	X	X		X	
General Secretary				X		X	X								X			
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

REACTION TIME

The attribute of reaction time was defined as follows:

Attribute	Definition	Activities
23. Reaction Time	respond rapidly to a stimulus when it appears.	correlate movements with time quickly; avoid a falling object.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	82%
General Secretary:	55%
Business Data Programmer:	0%

Matrix 23 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 23

Attribute: Reaction Time

Occupations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X		X	X	X	X	X	X	X	X	X	X	X		X		X	
General Secretary	X	X	X	X		X			X				X		X	X		X
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

EYE-HAND COORDINATION

The attribute of eye-hand coordination was defined as follows:

Attribute	Definition	Activities
24. Eye-Hand Coordination	make rapid and accurate hand movements in coordination with visual stimuli. This attribute is tested for by requiring the examinee to place dots in small circles as rapidly as possible.	assemble assorted designs into a construct; connect parts into an apparatus; lay a foundation.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic: 94%

General Secretary: 44%

Business Data Programmer: 0%

Matrix 24 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 24

Attribute: Eye-Hand Coordination

Occupations	Job Activities 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
General Secretary	X	X	X	X		X							X		X			X
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

MANUAL DEXTERITY

The attribute of manual dexterity was defined as follows:

Attribute	Definition	Activities
25. Manual Dexterity	make rapid and accurate arm-hand movements in manipulating fairly large objects.	wrap packages; adjust appliances/ apparatus; manipulate parts.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	94%
General Secretary:	11%
Business Data Programmer:	0%

Matrix 25 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 25

Attribute: Manual Dexterity

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
General Secretary		X				X												
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

FINGER DEXTERITY

The attribute of finger dexterity was defined as follows:

Attribute	Definition	Activities
26. Finger Dexterity	manipulate precisely small objects with the fingers.	manipulate small/fine parts; assemble intricate parts.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	88%
General Secretary:	61%
Business Data Programmer:	0%

Matrix 26 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 26

Attribute: Finger Dexterity

Occupations	Job Activities 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
General Secretary		X	X	X	X	X		X	X	X			X		X			X
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

ARM-HAND STEADINESS

The attribute of arm-hand steadiness was defined as follows:

Attribute	Definition	Activities
27. Arm-Hand Steadiness	make precise arm-hand movements and maintain steadiness while making these movements, where strength and speed are unimportant. Also, minimize movement while the arms and hands are in a set position.	paint a design; fire at an object; transfer matter from one container to another container.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	82%
General Secretary:	33%
Business Data Programmer:	0%

Matrix 27 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 27

Attribute: Arm-Hand Steadiness

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic				X	X	X	X	X	X	X	X	X	X	X	X	X	X	
General Secretary			X	X	X	X							X		X			
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

EXPLOSIVE STRENGTH

The attribute of explosive strength was defined as follows:

Attribute	Definition	Activities
28. Explosive Strength	apply a maximum amount of muscular force through one or more short bursts of effort.	thrust objects with force; drive an object into the ground.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	64%
General Secretary:	0%
Business Data Programmer:	0%

Matrix 28 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 28

Attribute: Explosive Strength

Occupations	Job Activities 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic			X	X	X	X	X	X	X		X	X	X		X			
General Secretary																		
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

STATIC STRENGTH

The attribute of static strength was defined as follows:

Attribute	Definition	Activities
29. Static Strength	exert considerable force against external objects for a brief period, as in lifting, pushing, pulling, squeezing, carrying, etc.	transport materials from one place to another; unload goods from a conveyor.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	58%
General Secretary:	0%
Business Data Programmer:	0%

Matrix 29 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 29

Attribute: Static Strength

Occupations	Job Activities 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic				X	X	X	X	X	X		X	X	X		X			
General Secretary																		
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

DYNAMIC STRENGTH

The attribute of dynamic strength was defined as follows:

Attribute	Definition	Activities
30. Dynamic Strength	exert force repeatedly or continuously over time so as to move or support the body. Muscular endurance and resistance to muscular fatigue are important in this attribute.	emplace screws using hand tools; perform strenuous exercises.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	64%
General Secretary:	0%
Business Data Programmer:	0%

Matrix 30 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 30

Attribute: Dynamic Strength

Occupations	Job Activities 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic				X	X	X	X	X	X	X	X	X	X		X			
General Secretary																		
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

BODY EQUILIBRIUM

The attribute of body equilibrium was defined as follows:

Attribute	Definition	Activities
31. Body Equilibrium	maintain or regain body balance and orientation when balance is threatened or temporarily lost, placing primary reliance on non-visual cues (for example, sensory cues).	paint from a ladder; walk a straight line; climb a tree; walk across one end of a room to the other end.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	94%
General Secretary:	5%
Business Data Programmer:	0%

Matrix 31 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 31

Attribute: Body Equilibrium

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
General Secretary	X																	
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

STAMINA

The attribute of stamina was defined as follows:

Attribute	Definition	Activities
32. Stamina	exert the body through continuous effort over an extended period of time (heart endurance).	perform physical exertion for a prolonged/extended period of time.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	88%
General Secretary:	11%
Business Data Programmer:	0%

Matrix 32 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 32

Attribute: Stamina

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
General Secretary								X								X		
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

NEAR VISUAL ACUITY

The attribute of near visual acuity was defined as follows:

Attribute	Definition	Activities
33. Near Visual Acuity	identify and discriminate visual detail at normal reading distance or less.	proofread written materials; carve small objects; make a cut in a solid object.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	100%
General Secretary:	83%
Business Data Programmer:	100%

Matrix 33 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 33

Attribute: Near Visual Acuity

Occupations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
General Secretary	X	X	X	X	X	X	X	X	X	X			X		X	X	X	X
*Business Data Programmer	X	X	X	X	X	X	X	X	X	X X	X							

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

FAR VISUAL ACUITY

The attribute of far visual acuity was defined as follows:

Attribute	Definition	Activities
34. Far Visual Acuity	identify/examine/specify details at distances beyond normal reading distance.	search for materials in a maze from a distance; read house numbers from a distance (while moving materials from one place to another); watch for pedestrians.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	100%
General Secretary:	0%
Business Data Programmer:	0%

Matrix 34 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 34

Attribute: Far Visual Acuity

Occupations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
General Secretary																		
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

DEPTH PERCEPTION

The attribute of depth perception was defined as follows:

Attribute	Definition	Activities
35. Depth Perception	determine and discriminate distances such as those determined from the observer to an object, between objects along the observer's line of vision, from the front to the back of an object so that it is seen three dimensionally, etc.	move object with a large mechanical device; approach a car within a safe distance.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic: 94%

General Secretary: 0%

Business Data Programmer: 0%

Matrix 35 presents the data for those job activities rated by respon-dents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 35

Attribute: Depth Perception

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	
General Secretary																		
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

COLOR DISCRIMINATION

The attribute of color discrimination was defined as follows:

Attribute	Definition	Activities
36. Color Discrimination	identify and distinguish color and similarities or differences among colors; identify harmonious or contrasting color combinations, or match colors adequately.	choose color schemes; mix shades of paint.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	35%
General Secretary:	0%
Business Data Programmer:	0%

Matrix 36 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 36

Attribute: Color Discrimination

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic					X				X	X	X				X		X	
General Secretary																		
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

AUDITORY ACUITY

The attribute of auditory acuity was defined as follows:

Attribute	Definition	Activities
37. Auditory Acuity	identify relevant sound cues and discriminate between sounds in terms of their intensity, pitch, or tonal quality.	listen for different sounds; take messages over the telephone; tune instruments.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	11%
General Secretary:	55%
Business Data Programmer:	0%

Matrix 37 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 37

Attribute: Auditory Acuity

Occupations	Job Activities 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X								X									
General Secretary			X	X				X	X	X		X	X	X		X		X
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

TACTUAL DISCRIMINATION

The attribute of tactual discrimination was defined as follows:

Attribute	Definition	Activities
38. Tactual Discrimination	identify and discriminate among characteristics of objects (such as size, shape, texture, etc.) through the use of touch.	examine an object by feeling for defects; model a small artifact.

The following comparisons across the three occupational areas represent that percentage of the sample surveyed who indicated that the above attribute was either necessary and/or important to demonstrate for a given job activity.

Automotive Mechanic:	58%
General Secretary:	0%
Business Data Programmer:	0%

Matrix 38 presents the data for those job activities rated by respondents as either necessary and/or important to demonstarate for a given job activity at a 3.5 level and above. A comparison is provided across the three occupational areas.

Matrix 38

Attribute: Tactual Discrimination

Occupations	Job Activities																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
*Automotive Mechanic	X			X	X	X	X	X	X	X	X				X			
General Secretary																		
*Business Data Programmer																		

*Automotive Mechanic and Business Data Programmer have 17 and 12 job activities.

APPENDIX T

HANDICAPPED-BY-ATTRIBUTE INSTRUMENT FOR THE EXPERTS

Name ______________________

Handicap-by-Attribute Instrument

THE CENTER FOR VOCATIONAL EDUCATION
THE OHIO STATE UNIVERSITY
1960 Kenny Road Columbus, Ohio 43210

Handicap-by-Attribute Survey

Purpose of Study

As a knowledgeable special educator with experience in working with persons who have one of nine handicapping conditions[1]--blindness, deafness, partial sightedness, mental retardation, emotional disturbance, specific learning disabilities, hard-of-hearing, speech disorders, and nonsensory physical handicaps--you have been selected to provide information for a research project currently being conducted at The Center for Vocational Education, The Ohio State University.[2] The title of this research project is "Relating the Capabilities of the Handicapped to the Human Attribute Requirements of Jobs".

Your responses to this survey form, along with those of other special educators, will contribute to the development of a manual and a guide for providing needed information for counselors, teachers, or employers to assist individuals who are handicapped in determining their occupational plans or anticipating employment requirements and preparation.

Your participation today involves providing us with your best judgment regarding 103 human characteristics or attributes related to a given handicapping condition. You are asked to respond to this survey form by circling one of the numbers 0, 1, 2, 3, 4, 5, 6, or 7 of the rating scale and responding yes or no to a question shown at the top of the rating sheet.

---

[1] Proposed taxonomy developed by consultants in cooperation with the Bureau of Education for the Handicapped in 1968.

[2] The study is sponsored through a grant of the U.S. Office of Education, Bureau of Education for the Handicapped.

You have also been provided a booklet of definitions of the human attributes (characteristics) which are numbered to correspond with each of the attributes on the rating sheet. You may refer to any of the definitions you wish as you circle answers.

The project staff sincerely thanks you for your important contribution to this study. Your opinions are especially important to the development of a shortened version of this rating instrument.

BACKGROUND INFORMATION

Place a check in the boxes which most closely represent your current position.

Role

- Special Education Teacher Educator ☐
- Special Education/Rehabilitation Administrator ☐
- Rehabilitation Counselor ☐
- Vocational Evaluator ☐
- Special Education/Rehabilitation Supervisor ☐
- Special Education/Rehabilitation Training Director ☐
- Teacher, Secondary ☐
- Teacher, Elementary ☐
- Teacher, Post Secondary ☐
- Other (specify) ____________

Level

- University ☐
- Public School, Secondary ☐
- Public School, Elementary ☐
- Post Secondary Institution ☐
- State Department of Education ☐
- Public Residential Facility ☐
- Sheltered Workshop ☐
- Parochial School ☐
- Public Service Agency ☐
- Ancillary Service Center (e.g., Media Center, Diagnostic/Assessment Center) ☐
- Other (specify) ____________ ☐

Number of years in present position (Please circle)

1-3 4-6 7-9 10+

Number of years working with persons who are handicapped (Please circle)

1-3 4-6 7-9 10+

Place a check in the box(es) which correspond to the types of exceptionalities with which you have had experience/training.

- Blind ☐
- Partially Sighted ☐
- Mentally Retarded ☐
- Deaf ☐
- Hard of Hearing ☐

- Emotionally Disturbed ☐
- Nonsensory Physical (orthopedically impaired) ☐
- Special Learning Disabilities ☐
- Speech Disorders ☐
- Multiple Handicapped ☐

Example (continued)

Attribute	Rating
D. Sensory Capacities	
58. Near Visual Acuity	0 1 2 3 4 5 6 [✓ 7] [✓ Y] N

---

5. Be certain to circle a number and a yes/no response for each attribute for the designated handicapping condition. Also be sure that you have completed the background information sheet at the front of the survey booklet.

6. Your comments regarding the instrument may be written at the bottom of page 3 of the instrument.

7. Return your definition booklets and the survey form with your name written on the cover in the envelope provided.

8. Thank you very much for your cooperation and assistance.

Definition of Handicapping Condition

Blind--------------Children with vision so defective that sight cannot be used as a primary avenue of learning and print cannot be used as the primary mode of reading. Excluded from this group are legally blind children who are able to read large type.

HANDICAPPING CONDITION:

RATING SCALE
Persons with this handicapping condition, generally

0 are not capable of demonstrating this attribute
1 are capable of demonstrating this attribute to a very minimal degree
2 are capable of demonstrating this attribute to a minimal degree
3 are capable of demonstrating this attribute to a low moderate degree
4 are capable of demonstrating this attribute to a moderate degree
5 are capable of demonstrating this attribute to a high moderate degree
6 are capable of demonstrating this attribute to a high degree
7 are capable of demonstrating this attribute to a very high degree

YES/NO Persons with this handicapping condition do not differ from persons who are non-handicapped in the ability to demonstrate this attribute

ATTRIBUTES	RATING
A. General Vocational Capabilities	
1. Tools	0 1 2 3 4 5 6 7 Y N
2. Mechanical systems	0 1 2 3 4 5 6 7 Y N
3. Stationary machine and equipment operation	0 1 2 3 4 5 6 7 Y N
4. Vehicular operation	0 1 2 3 4 5 6 7 Y N
5. Connections and fittings	0 1 2 3 4 5 6 7 Y N
6. Fluid systems	0 1 2 3 4 5 6 7 Y N
7. Measuring instruments	0 1 2 3 4 5 6 7 Y N
8. Electricity	0 1 2 3 4 5 6 7 Y N
9. Layout and visualization	0 1 2 3 4 5 6 7 Y N
10. Structures	0 1 2 3 4 5 6 7 Y N
11. Materials	0 1 2 3 4 5 6 7 Y N
12. Chemicals	0 1 2 3 4 5 6 7 Y N
13. Foods and cooking	0 1 2 3 4 5 6 7 Y N
14. Biological systems	0 1 2 3 4 5 6 7 Y N
15. Medical and first aid	0 1 2 3 4 5 6 7 Y N
16. Arithmetic computation	0 1 2 3 4 5 6 7 Y N
17. Arithmetic conventions	0 1 2 3 4 5 6 7 Y N
18. Clerical	0 1 2 3 4 5 6 7 Y N
19. Verbal communication	0 1 2 3 4 5 6 7 Y N
20. Sales	0 1 2 3 4 5 6 7 Y N
21. Service	0 1 2 3 4 5 6 7 Y N
22. Dealing with social situations	0 1 2 3 4 5 6 7 Y N

ATTRIBUTES	RATING
23. Etiquette and social grace	0 1 2 3 4 5 6 7 Y N
24. Style and grooming	0 1 2 3 4 5 6 7 Y N
B. Cognitive Abilities	
25. Closure	0 1 2 3 4 5 6 7 Y N
26. Form perception	0 1 2 3 4 5 6 7 Y N
27. Perceptual speed	0 1 2 3 4 5 6 7 Y N
28. Spatial scanning	0 1 2 3 4 5 6 7 Y N
29. Spatial orientation	0 1 2 3 4 5 6 7 Y N
30. Visualization	0 1 2 3 4 5 6 7 Y N
31. Number facility	0 1 2 3 4 5 6 7 Y N
32. Memory	0 1 2 3 4 5 6 7 Y N
33. Verbal comprehension	0 1 2 3 4 5 6 7 Y N
34. Grammar	0 1 2 3 4 5 6 7 Y N
35. Spelling	0 1 2 3 4 5 6 7 Y N
36. Expressional fluency	0 1 2 3 4 5 6 7 Y N
37. Ideational fluency	0 1 2 3 4 5 6 7 Y N
38. Sensitivity to problems	0 1 2 3 4 5 6 7 Y N
39. Deductive reasoning	0 1 2 3 4 5 6 7 Y N
40. Inductive reasoning	0 1 2 3 4 5 6 7 Y N
41. Originality	0 1 2 3 4 5 6 7 Y N
42. Social intelligence	0 1 2 3 4 5 6 7 Y N
43. Aesthetic judgment	0 1 2 3 4 5 6 7 Y N
44. Musical aptitude	0 1 2 3 4 5 6 7 Y N

T-6

HANDICAPPING CONDITION:

RATING SCALE

Persons with this handicapping condition, generally

0 **are** not capable of demonstrating this attribute
1 **are** capable of demonstrating this attribute to a very minimal degree
2 **are** capable of demonstrating this attribute to a minimal degree
3 **are** capable of demonstrating this attribute to a low moderate degree
4 **are** capable of demonstrating this attribute to a moderate degree
5 **are** capable of demonstrating this attribute to a high moderate degree
6 **are** capable of demonstrating this attribute to a high degree
7 **are** capable of demonstrating this attribute to a very high degree

YES/NO Persons with this handicapping condition do not differ from persons who are non-handicapped in the ability to demonstrate this attribute

ATTRIBUTES	RATING
C. Psychomotor Abilities	
45. Control precision	0 1 2 3 4 5 6 7 Y N
46. Multilimb coordination	0 1 2 3 4 5 6 7 Y N
47. Reaction time	0 1 2 3 4 5 6 7 Y N
48. Eye-hand coordination	0 1 2 3 4 5 6 7 Y N
49. Manual dexterity	0 1 2 3 4 5 6 7 Y N
50. Finger dexterity	0 1 2 3 4 5 6 7 Y N
51. Arm-hand steadiness	0 1 2 3 4 5 6 7 Y N
52. Explosive strength	0 1 2 3 4 5 6 7 Y N
53. Static strength	0 1 2 3 4 5 6 7 Y N
54. Dynamic strength	0 1 2 3 4 5 6 7 Y N
55. Body equilibrium	0 1 2 3 4 5 6 7 Y N
56. Stamina	0 1 2 3 4 5 6 7 Y N
D. Sensory Capacities	
57. Near visual acuity	0 1 2 3 4 5 6 7 Y N
58. Far visual acuity	0 1 2 3 4 5 6 7 Y N
59. Depth perception	0 1 2 3 4 5 6 7 Y N
60. Color discrimination	0 1 2 3 4 5 6 7 Y N
61. Auditory acuity	0 1 2 3 4 5 6 7 Y N
62. Tactual discrimination	0 1 2 3 4 5 6 7 Y N
E. Interests	
63. Manual work	0 1 2 3 4 5 6 7 Y N
64. Machine work	0 1 2 3 4 5 6 7 Y N
65. Personal service	0 1 2 3 4 5 6 7 Y N
66. Care of people or animals	0 1 2 3 4 5 6 7 Y N
67. Clerical work	0 1 2 3 4 5 6 7 Y N
68. Inspecting and testing	0 1 2 3 4 5 6 7 Y N
69. Crafts and precise operations	0 1 2 3 4 5 6 7 Y N
70. Customer services	0 1 2 3 4 5 6 7 Y N
71. Nursing and related technical services	0 1 2 3 4 5 6 7 Y N
72. Skilled personal services	0 1 2 3 4 5 6 7 Y N
73. Training	0 1 2 3 4 5 6 7 Y N
74. Literary	0 1 2 3 4 5 6 7 Y N
75. Numerical	0 1 2 3 4 5 6 7 Y N
76. Appraisal	0 1 2 3 4 5 6 7 Y N
77. Agriculture	0 1 2 3 4 5 6 7 Y N
78. Applied technology	0 1 2 3 4 5 6 7 Y N
79. Promotion and communication	0 1 2 3 4 5 6 7 Y N
80. Management and supervision	0 1 2 3 4 5 6 7 Y N
81. Artistic	0 1 2 3 4 5 6 7 Y N
82. Sales representative	0 1 2 3 4 5 6 7 Y N
83. Music	0 1 2 3 4 5 6 7 Y N
84. Entertainment and performing arts	0 1 2 3 4 5 6 7 Y N
85. Teaching, counseling and social work	0 1 2 3 4 5 6 7 Y N
86. Medical	0 1 2 3 4 5 6 7 Y N
F. Needs	
87. Ability utilization	0 1 2 3 4 5 6 7 Y N
88. Achievement	0 1 2 3 4 5 6 7 Y N

HANDICAPPING CONDITION:

RATING SCALE
Persons with this handicapping condition, generally

0 are not capable of demonstrating this attribute
1 are capable of demonstrating this attribute to a very minimal degree
2 are capable of demonstrating this attribute to a minimal degree
3 are capable of demonstrating this attribute to a low moderate degree
4 are capable of demonstrating this attribute to a moderate degree
5 are capable of demonstrating this attribute to a high moderate degree
6 are capable of demonstrating this attribute to a high degree
7 are capable of demonstrating this attribute to a very high degree

ATTRIBUTES	RATING	ATTRIBUTES	RATING
89. Activity	0 1 2 3 4 5 6 7 Y N	97. Recognition	0 1 2 3 4 5 6 7 Y N
90. Advancement	0 1 2 3 4 5 6 7 Y N	98. Responsibility	0 1 2 3 4 5 6 7 Y N
91. Authority	0 1 2 3 4 5 6 7 Y N	99. Security	0 1 2 3 4 5 6 7 Y N
92. Compensation	0 1 2 3 4 5 6 7 Y N	100. Social service	0 1 2 3 4 5 6 7 Y N
93. Co-workers	0 1 2 3 4 5 6 7 Y N	101. Social status	0 1 2 3 4 5 6 7 Y N
94. Creativity	0 1 2 3 4 5 6 7 Y N	102. Variety	0 1 2 3 4 5 6 7 Y N
95. Independence	0 1 2 3 4 5 6 7 Y N	103. Working conditions	0 1 2 3 4 5 6 7 Y N
96. Moral values	0 1 2 3 4 5 6 7 Y N		

Comments:

APPENDIX U

SUMMARY ANALYSIS OF HANDICAPPED-BY-ATTRIBUTE DATA PROVIDED BY EXPERTS

Responses to Handicap-by-Attribute Instrument

HANDICAPPING CONDITION: Partially Sighted

Attributes Rated 7.0

NONE

Attributes Rated 6.0

Number	Attribute Name
1	Tools
3	Stationary Machine and Equipment Operations
19	Verbal Communication
21	Service
32	Memory
33	Verbal Comprehension
61	Auditory Acuity
85	Teaching, Counseling, and Social Work

Attributes Rated 5.0

Number	Attribute Name
2	Mechanical Systems
4	Vehicular Operations
13	Foods and Cooking
15	Medical and First Aid
16	Arithmetic Computation
17	Arithmetic Conventions
20	Sales
22	Dealing with Social Situations
31	Number Facility
34	Grammar
63	Manual Work
65	Personal Service
66	Care of People or Animals
73	Training
74	Literary
77	Agriculture
82	Sales Representative
83	Music
84	Entertainment and Performing Arts
94	Creativity

Attributes Rated 4.0

Number	Attribute Name
5	Connections and Fittings
6	Fluid Systems
8	Electricity
10	Structures
11	Materials
23	Etiquette and Social Grace
24	Style and Grooming
25	Closure
36	Expressional Fluency
44	Musical Aptitude

57	Near Visual Acuity
70	Customer Services
72	Skilled Customer Services
78	Applied Technology
95	Independence

Attributes Rated 3.0

Number	Attribute Name
7	Measuring Instruments
9	Layout and Visualization
12	Chemicals
14	Biological Systems
18	Clerical
26	Form Perception
29	Spatial Orientation
30	Visualization
35	Spelling
37	Ideational Fluency
41	Originality
42	Social Intelligence
43	Aesthetic Judgment
45	Control Precision
46	Multilimb Coordination
53	Static Strength
54	Dynamic Strength
55	Body Equilibrium
56	Stamina
62	Tactual Discrimination
64	Machine Work
71	Nursing and Related Technical Services
75	Numerical
76	Appraisal
79	Promotion and Communication
80	Management and Supervision
81	Artistic
89	Activity
91	Authority

Attributes Rated 2.0

Number	Attribute Name
27	Perceptual Speed
28	Spatial Scanning
47	Reaction Time
48	Eye-Hand Coordination
49	Manual Dexterity
50	Finger Dexterity
51	Arm-Hand Steadiness
52	Explosive Strength
59	Depth Perception
60	Color Discrimination
67	Clerical Work
68	Inspecting and Testing
69	Crafts and Precise Operations
86	Medical

Attributes Rated 1.0

Number	Attribute Name
*58	Far Visual Acuity

Attributes Rated 0

Number	Attribute Name
*58	Far Visual Acuity

Attributes Not Rated (Circled yes response for each)

Number	Attribute Name
92	Compensation
93	Co-workers
96	Moral Values
97	Recognition
98	Responsibility
99	Security
100	Social Service
101	Social Status
102	Variety
103	Working Conditions

Comments

Partially sighted persons are not a homogenous group. And, it should be clear that these attributes may or may not be related to the visual handicapping condition *in and of itself*. In many cases, these attributes may be more a function of the social treatment, environmental interaction, and expectations by significant others than to result from the end--organ impairment or disability. Care should be taken not to perpetuate the development of such attitudes by building expectations in those who will counsel, teach, or employ persons with such impairments, disabilities, and/or handicaps. To contribute to the perpetuation of many current stereotypes concerning persons with partial sight would be detrimental and unwarranted.

HANDICAPPING CONDITION: Emotional Disturbance

Attributes rated at 7.0

Number	Attribute Name
1	Tools
2	Mechanical systems
4	Vehicular operation
5	Connections & fittings
6	Fluid systems
7	Measuring instruments
8	Electricity
9	Layout and visualization
10	Structures
11	Materials
12	Chemicals
13	Foods and cooking
14	Biological systems
15	Medical and first aid
16	Arithmetic computation
17	Arithmetic conventions
18	Clerical
20	Sales
21	Service
22	Dealing with social situations
31	Number facility
32	Memory
34	Grammar
35	Spelling
36	Expressional fluency
37	Ideational fluency
38	Sensitivity to problems
39	Deductive reasoning
40	Inductive reasoning
41	Originality
42	Social intelligence
43	Aesthetic judgment
44	Musical aptitude
45	Control precision
46	Multilimb coordination
47	Reaction time
48	Eye-hand coordination
49	Manual dexterity
50	Finger dexterity
51	Arm-hand steadiness
52	Explosive strength
53	Static strength
55	Body equilibrium
56	Stamina
57	Near visual acuity
58	Far visual acuity
59	Depth perception

60	Color discrimination
61	Auditory acuity
62	Tactual discrimination
63	Manual work
64	Machine work
66	Care of people or animals
67	Clerical work
68	Inspecting and testing
69	Crafts and precise operations
74	Literary
75	Numerical
76	Appraisal
78	Applied technology
79	Promotion and communication
80	Management and supervision
81	Artistic
82	Sales representative
83	Music
84	Entertainment and performing arts
85	Teaching, counseling and social work
86	Medical
88	Achievement
89	Activity
90	Advancement
92	Compensation
97	Recognition
100	Social service
101	Social status
102	Variety
103	Working conditions

Attributes rated at 5.0

Number	Attribute Name
26	Form perception
27	Perceptual speed
28	Spatial scanning
29	Spatial orientation
30	Visualization
33	Verbal comprehension
54	Dynamic strength
57	Near visual acuity
70	Customer services
77	Agriculture
87	Ability utilization
91	Authority
93	Co-workers
94	Creativity
96	Moral values
98	Responsibility

Attributes rated at 4.0

Number	Attribute Name
25	Closure
72	Skilled personal
73	Training
95	Independence
99	Security

Attributes rated at 3.0

Number	Attribute Name
19	Verbal communication

Attributes rated at 2.0

NONE

Attributes rated at 1.0

NONE

Attributes rated at 0

NONE

Attributes not rated

Number	Attribute Name
23	Etiquette and social grace
24	Style and grooming

Comments

NONE

HANDICAPPING CONDITION: Mental Retardation

Attributes Rated 7.0

foods and cooking
style and grooming
near visual acuity
far visual acuity
depth perception
color discrimination
auditory acuity
tactual discrimination
ability utilization
achievement
activity
advancement
compensation
co-workers
recognition
responsibility
security
social service
social status
variety
working conditions

Attributes Rated 6.0

tools
mechanical systems
vehicular operation
connections and fittings
fluid systems
measuring instruments
materials
chemicals
medical and first aid
arithmetic computation
clerical
verbal communication
sales
dealing with social situations
control precision
multilimb coordination
reaction time
eye-hand coordination
manual dexterity
finger dexterity
arm-hand steadiness
explosive strength
static strength
dynamic strength
body equilibrium

stamina
inspecting and testing
crafts and precise operations
agriculture
applied technology

Attributes Rated 5.0

Stationary machines and equipment operation
layout and visualization
structures
biological systems
arithmetic conventions
service
etiquette and social grace
closure
form perception
perceptual speed
spatial scanning
spatial orientation
visualization
number facility
memory
verbal comprehension
grammar
spelling
expressional fluency
ideational fluency
sensitivity to problems
deductive reasoning
inductive reasoning
originality
social intelligence
aesthetic judgment
musical aptitude
manual work
machine work
personal service
care of people and animals
clerical work
customer services
nursing and related technical services
training
literacy
numerical
appraisal
promotion and communication
management and supervision
artistic
sales representative
music
entertainment and performing arts
teaching, counseling, and social work
authority
creativity

HANDICAPPING CONDITION: Blind

Attributes Rated 7.0

Grammar
Finger dexterity
Auditory Acuity
Tactual discrimination
Literacy
Numerical

Attributes Rated 6.0

Biological systems
Arithmetic computation
Clerical
Verbal communication
Etiquette and Social Grace
Number facility
Memory
Verbal comprehension
Spelling
Expressional fluency
Ideational fluency
Sensitivity to problems
Deductive reasoning
Inductive reasoning
Originality
Aesthetic judgment
Manual dexterity
Arm-hand steadiness
Explosive strength
Static strength
Dynamic strength
Stamina
Manual work
Personal service
Care of people and animals
Training
Appraisal
Creativity
Moral values

Attributes Rated 5.0

Measuring instruments
Foods and cooking
Medical and first aid
Arithmetic conventions
Dealing with social situations
Style and grooming
Spatial orientation
Musical aptitude
Control precision
Reaction time
Body equilibrium

Machine work
Clerical work
Artistic
Music
Entertainment and performing arts
Achievement
Activity
Advancement
Authority
Compensation
Co-workers
Independence
Recognition
Responsibility
Security
Social Service
Socal Status
Variety
Working conditions

Attributes Rated 4.0

Tools
Stationary machine and equipment operation
Connections and fittings
Structures
Materials
Form perception
Perceptual speed
Spatial scanning
Multilimb coordination
Promotion and communication
Management and supervision
Sales Representative
Teaching, counseling, and social work
Ability utilization

Attributes Rated 3.0

Mechanical systems
Fluid systems
Chemicals
Sales
Service
Customer services
Skilled personal services

Attributes Rated 2.0

Color discrimination
Inspecting and testing
Crafts and precise operations
Nursing and related technical services
Agriculture
Applied technology
Medical

Attributes Rated 1.0

NONE

Attributes Rated 0

Vehicular operation
Layout and visualization
Closure
Visualization
Eye-hand coordination
Near visual acuity
Far visual acuity
Depth perception

Comments:

None

HANDICAPPING CONDITION: Deaf

Attributes Rated 7.0

Tools
Stationary machine and equipment operation
Connections and fittings
Fluid systems
Measuring instruments
Electricity
Materials
Foods and cooking
Arithmetic computation
Arithmetic conventions
Spatial orientation
Eye-hand coordination
Manual dexterity
Finger dexterity
Arm-hand steadiness
Explosive strength
Static strength
Stamina
Manual work
Machine work
Ability utilization
Activity
Advancement
Compensation
Recognition
Security

Attributes Rated 6.0

Mechanical systems
Vehicular operation
Layout and visualization
Structures
Chemicals
Biological systems
Style and grooming
Closure
Form perception
Spatial scanning
Visualization
Number facility
Control precision
Multilimb coordination
Reaction time
Dymamic strength
Far visual acuity
Depth perception
Color discrimination
Tactual discrimination
Inspecting and testing
Agriculture
Applied technology
Crafts and precise operations

Entertainment and performing arts
Achievement
Co-workers
Variety
Working conditions

Attributes Rated 5.0

Perceptual speed
Body equilibrium
Near visual acuity
Clerical work
Teaching, counseling, and social work
Medical
Creativity
Independence
Moral values
Responsibility
Social service
Social status

Attributes Rated 4.0

Memory
Verbal comprehension
Deductive reasoning
Inductive reasoning
Social intelligence
Aesthetic judgment
Skilled personal services

Attributes Rated 3.0

Medical and first aid
Grammar
Spelling
Ideational fluency
Sensitivity to problems
Originality
Nursing and related technical services

Attributes Rated 2.0

Clerical
Sales
Service
Dealing with social situations
Etiquette and social grace
Expressional fluency
Personal service
Care of people and animals
Training
Numerical
Appraisal
Artistic
Sales representative

Attributes Rated 1.0

Verbal communication
Customer services
Literacy
Promotion and communication

Attributes Rated 0

Musical aptitude
Auditory acuity
Music

Comments:

None

HANDICAPPING CONDITION: Learning Disabilities

Attributes Rated 7.0
NONE

Attributes Rated 6.0
NONE

Attributes Rated 5.0
NONE

Attributes Rated 4.0
NONE

Attributes Rated 3.0
NONE

Attributes Rated 2.0
NONE

Attributes Rated 1.0
NONE

Attributes Rated 0
NONE

Comments

I cannot respond in good faith to this questionnaire. I appreciate the difficulties one meets with when trying to get a significant return on such an instrument, however, this rating form is antithetical to a functionally based skills training approach to the area of learning disabilities. Attempting to categorize and generalize further about individuals labeled learning disabled only makes an all too mystical field more so. I'm afraid your questionnaire assumes and seeks the mythical average LD kid. He, or she, simply does not exist.

HANDICAPPING CONDITION: Nonsensory Physical

Attributes Rated 7.0
NONE

Attributes Rated 6.0
NONE

Attributes Rated 5.0
NONE

Attributes Rated 4.0
NONE

Attributes Rated 3.0
NONE

Attributes Rated 2.0
NONE

Attributes Rated 1.0
NONE

Attributes Rated 0
NONE

Comments:

I am sorry I cannot respond to this instrument. Persons classified as "Nonsensory Physical Disabilities" demonstrate wide ranges of individual differences in attributes. My rating would not add to your understanding of this condition.

APPENDIX V

ATTRIBUTE-BY-EXCEPTIONALITY INSTRUMENT FOR THE TWO POPULATIONS

NAME ______________________________

ORGANIZATION ______________________

ATTRIBUTE-BY-EXCEPTIONALITY SURVEY

THE NATIONAL CENTER
FOR RESEARCH IN VOCATIONAL EDUCATION
The Ohio State University · 1960 Kenny Road · Columbus, Ohio 43210

276

Attribute-by-Exceptionality Survey

Purpose of Study

As a knowledgeable vocational counselor, rehabilitation counselor, specialist, and/or individual who is directly working in the counseling and/or placement of individuals with handicapping conditions at the secondary, post-secondary, or sheltered workshop environment, with experience in working with persons who have one of nine handicapping conditions---blindness, deafness, partial sightedness, mental retardation, emotional disturbance, specific learning disabilities, hard-of-hearing, speech disorders, and nonsensory physical handicaps[1]--you have been selected to provide information for a research project currently being conducted at The National Center for Research in Vocational Education, The Ohio State University.[2] The title of this research project is "Relating the Capabilities of the Handicapped to the Human Attribute Requirements of Jobs."

Your responses to this survey form along with those of other special educators will contribute to the development of a manual and a guide for providing needed information for counselors, teachers, or employers to assist individuals who are handicapped in determining their occupational plans or anticipating employment requirements and preparation.

Your participation today involves providing us with your best judgment regarding 38 human characteristics or attributes related to a given handicapping condition. You are asked to respond to this survey form by circling one of the numbers 0, 1, 2, 3, 4, 5, 6, or 7 of the rating scale and responding yes or no to a question shown at the top of the rating sheet.

---

[1] Proposed taxonomy developed by consultants in cooperation with the Bureau of Education for the Handicapped in 1968.

[2] The study is sponsored through a grant of the U.S. Office of Education, Bureau of Education for the Handicapped.

You have also been provided a booklet of definitions of the human attributes (characteristics) which are numbered to correspond with each of the attributes on the rating sheet. You may refer to any of the definitions you wish as you circle answers.

The project staff sincerely thanks you for your important contribution to this study.

Statement of Confidentiality

The Center for Vocational Education wishes to reaffirm its previous commitment to complete confidentiality. The published data will not be associated with any individual or agency.

BACKGROUND INFORMATION

Place a check on the line which most closely represents your current position.

Role

Special Education Teacher Educator _____

Special Education/ Rehabilitation _____

Rehabilitation Counselor_____

Vocational Evaluator_____

Vocational Counselor _____

Rehabilitation Specialist_____

Teacher, Secondary_____

Job Placement Specialist _____

Other (specify) __________________

Level

Public School, Elementary_____

Post Secondary Institution_____

Secondary Institution_____

Public Residential Facility_____

Private Residential Facility_____

Public Non-residential Facility_____

Private Non-residential Facility_____

Sheltered Workshop_____

Public Service Agency_____

Ancillary Service Center (e.g., Media Center, Diagnostic/ Assessment Center)_____

Other (specify) ______________________

Place a check on the line(s) which correspond to the types of exceptionalities with which you have had experience and/or training and place a check on the line(s) which correspond to the types of exceptionalities with which you currently work.
*Note: (E) designates experience/training and (W) designates work

	(E)	(W)
Blind	__	__
Partially Sighted	__	__
Mentally Retarded	__	__
Deaf	__	__
Hard of Hearing	__	__

	(E)	(W)
Emotionally Disturbed	__	__
Nonsensory Physical (orthopedically impaired)	__	__
Special Learning Disabilities	__	__
Speech Disorders	__	__
Multiple Handicapped	__	__

Directions for Marking Rating Sheets

1. Read the rating scale (0-7) and yes/no question at the top of the rating sheet. The same rating scale is used for each of your responses.

2. For each handicapping condition, there are 38 human characteristics or attributes listed with the set of numbers 0 to 7 following each and a yes/no response. Rate the degree to which persons with an identified handicapping condition with whom you work are capable of demonstrating each of the 38 human attributes. Circle the appropriate numbers (0, 1, 2, 3, 4, 5, 6, 7) following each attribute. It is very important thay you circle one number for each attribute. Your perceptions of this individual's ability to demonstrate a particular attribute should be based upon actual observation of the individual in real or simulated work situations, anecodotal records, test data (where applicable), and personal knowledge of the individual.

3. For each of the 38 attributes, indicate whether persons with this handicapping condition do or do not differ from persons who are non-handicapped in the ability to demonstrate this attribute. Circle the letter "Y" indicating yes, if you believe that persons with handicapping conditions do differ from non-handicapped persons in the ability to demonstrate this attribute. Circle the letter "N" indicating no, if you believe that persons with this handicapping condition do not differ from non-handicapped persons in the ability to demonstrate this attribute. It is very important that you circle either Y or N for each attribute.

Example

RATING SCALE
Persons with this handicapping condition, generally

0 are not capable of demonstrating this attribute
1 are capable of demonstrating this attribute to a very minimal degree
2 are capable of demonstrating this attribute to a minimal degree
3 are capable of demonstrating this attribute to a low moderate degree
4 are capable of demonstrating this attribute to a moderate degree
5 are capable of demonstrating this attribute to a high moderate degree
6 are capable of demonstrating this attribute to a high degree
7 are capable of demonstrating this attribute to a very high degree

YES/NO Persons with this handicapping condition (yes, do differ - no, do not differ) from persons who are non-handicapped in the ability to demonstrate this attribute.

Example (continued)

Attribute	Rating
D. Sensory Capacities	
33. Near Visual Acuity	0 1 2 3 4 5 6 7 Y N

---

4. Be certain to circle a number and a yes/no response for each attribute for the designated categories. Also be sure that you have completed the background information sheet at the front of the survey booklet.

5. Your comments regarding the instrument may be written on the back page of this instrument.

6. Return your definition booklet and the survey form with your name written on the cover to a project staff memeber.

7. Thank you for your cooperation and assistance.

Rating Scale
Persons with this handicapping condition with whom you work, generally

0 are not capable of demonstrating this attribute
1 are capable of demonstrating this attribute to a very minimal degree
2 are capable of demonstrating this attribute to a minimal degree
3 are capable of demonstrating this attribute to a low moderate degree
4 are capable of demonstrating this attribute to a moderate degree
5 are capable of demonstrating this attribute to a high moderate degree
6 are capable of demonstrating this attribute to a high degree
7 are capable of demonstrating this attribute to a very high degree

YES/NO Persons with this handicapping condition (Yes, do differ - No, do not differ) from persons who are non-handicapped in the ability to demonstrate this attribute

ATTRIBUTES	RATING
A. Cognitive Attribute	0 1 2 3 4 5 6 7 Y N
1. Closure	0 1 2 3 4 5 6 7 Y N
2. Form perception	0 1 2 3 4 5 6 7 Y N
3. Perceptual speed	0 1 2 3 4 5 6 7 Y N
4. Spatial scanning	0 1 2 3 4 5 6 7 Y N
5. Spatial orientation	0 1 2 3 4 5 6 7 Y N
6. Visualization	0 1 2 3 4 5 6 7 Y N
7. Number facility	0 1 2 3 4 5 6 7 Y N
8. Memory	0 1 2 3 4 5 6 7 Y N
9. Verbal comprehension	0 1 2 3 4 5 6 7 Y N
10. Grammar	0 1 2 3 4 5 6 7 Y N
11. Spelling	0 1 2 3 4 5 6 7 Y N
12. Expressional fluency	0 1 2 3 4 5 6 7 Y N
13. Ideational fluency	0 1 2 3 4 5 6 7 Y N
14. Sensitivity to problems	0 1 2 3 4 5 6 7 Y N
15. Deductive reasoning	0 1 2 3 4 5 6 7 Y N
16. Inductive reasoning	0 1 2 3 4 5 6 7 Y N
17. Originality	0 1 2 3 4 5 6 7 Y N
18. Social intelligence	0 1 2 3 4 5 6 7 Y N
19. Aesthetic judgement	0 1 2 3 4 5 6 7 Y N
20. Musical Aptitude	0 1 2 3 4 5 6 7 Y N
B. Psychomotor Attributes	
21. Control precision	0 1 2 3 4 5 6 7 Y N
22. Multilimb coordination	0 1 2 3 4 5 6 7 Y N
23. Reaction time	0 1 2 3 4 5 6 7 Y N
24. Eye-hand coordination	0 1 2 3 4 5 6 7 Y N

ATTRIBUTES	RATING
25. Manual dexterity	0 1 2 3 4 5 6 7 Y N
26. Finger dexterity	0 1 2 3 4 5 6 7 Y N
27. Arm-Hand steadiness	0 1 2 3 4 5 6 7 Y N
28. Explosive strength	0 1 2 3 4 5 6 7 Y N
29. Static strength	0 1 2 3 4 5 6 7 Y N
30. Dynamic strength	0 1 2 3 4 5 6 7 Y N
31. Body equilibrium	0 1 2 3 4 5 6 7 Y N
32. Stamina	0 1 2 3 4 5 6 7 Y N
C. Sensory Capacity Attributes	
33. Near visual acuity	0 1 2 3 4 5 6 7 Y N
34. Far visual acuity	0 1 2 3 4 5 6 7 Y N
35. Depth perception	0 1 2 3 4 5 6 7 Y N
36. Color discrimination	0 1 2 3 4 5 6 7 Y N
37. Auditory acuity	0 1 2 3 4 5 6 7 Y N
38. Tactual discrimination	0 1 2 3 4 5 6 7 Y N

NAME ______________________________

ORGANIZATION ______________________

ATTRIBUTE-BY-EXCEPTIONALITY SURVEY

THE NATIONAL CENTER
FOR RESEARCH IN VOCATIONAL EDUCATION

The Ohio State University · 1960 Kenny Road · Columbus, Ohio 43210

Attribute-by-Exceptionality Survey

Thank you for agreeing to help us with our study here at the National Center for Research in Vocational Education, The Ohio State University.

Your participation today involves providing us with your best judgment regarding your ability to demonstrate a group of 38 activities. You are asked to answer this survey form by circling one of the numbers 0, 1, 2, 3, 4, 5, 6, 7, on the rating scale and circling yes or no to a question shown at the top of the rating sheet. You are to circle the answers next to the group of 38 activities.

The project staff sincerely thanks you for your important contribution to this study.

Statement of Confidentiality

The Center for Vocational Education wishes to reaffirm its previous commitment to complete confidentiality. The published data will not be associated with any individual or agency.

Rating Scale
As an individual with a handicapping condition, I am

0 not capable of demonstrating this attribute
1 capable of demonstrating this attribute to a very minimal degree
2 capable of demonstrating this attribute to a minimal degree
3 capable of demonstrating this attribute to a low moderate degree
4 capable of demonstrating this attribute to a moderate degree
5 capable of demonstrating this attribute to a high moderate degree
6 capable of demonstrating this attribute to a high degree
7 capable of demonstrating this attribute to a very high degree

YES/NO Persons with this handicapping condition (Yes, do differ - No, do not differ) from persons non-handicapped in the ability to demonstrate this activity

	Examples of Attribute Activities	Rating
1	look for hidden detail in pictures; look at designs for background detail in wallpaper; solve a puzzle	0 1 2 3 4 5 6 7 Y N
2	paint designs on surfaces; compare objects for similarities and differences; compare pictures of a landscape; paint a design on a fire hydrant	0 1 2 3 4 5 6 7 Y N
3	check a proof against the original copy; change information from printed matter into a machine	0 1 2 3 4 5 6 7 Y N
4	look for objects on a large surface; identify quickly numbers ending in a five in a table	0 1 2 3 4 5 6 7 Y N
5	conduct a tour; drive a car; ride a bike; swim in an ocean; climb a mountain	0 1 2 3 4 5 6 7 Y N
6	use a mirror to place objects; sketch designs for a pattern; arrange furniture	0 1 2 3 4 5 6 7 Y N
7	figure objects to scale or a map; solve the answer to an arithmetic problem	0 1 2 3 4 5 6 7 Y N
8	give a speech from memory; remember names, addresses and phone numbers	0 1 2 3 4 5 6 7 Y N

Rating Scale
As an individual with a handicapping condition, I am

0 not capable of demonstrating this attribute
1 capable of demonstrating this attribute to a very minimal degree
2 capable of demonstrating this attribute to a minimal degree
3 capable of demonstrating this attribute to a low moderate degree
4 capable of demonstrating this attribute to a moderate degree
5 capable of demonstrating this attribute to a high moderate degree
6 capable of demonstrating this attribute to a high degree
7 capable of demonstrating this attribute to a very high degree

YES/NO Persons with this handicapping condition (Yes, do differ - No, do not differ) from persons non-handicapped in the ability to demonstrate this activity

	Examples of Attribute Activities	Rating
9	write an article; prepare a presentation; write a letter; review printed materials	0 1 2 3 4 5 6 7 Y N
10	read printed material for correctness; read a paper	0 1 2 3 4 5 6 7 Y N
11	check typed material; prepare a paper; proofread type written print	0 1 2 3 4 5 6 7 Y N
12	question an individual; respond to questions rapidly; write a report	0 1 2 3 4 5 6 7 Y N
13	give new ideas for consideration; give suggestions for a new mailing strategy; suggest style changes in products; suggest a new technique	0 1 2 3 4 5 6 7 Y N
14	expect problems that could arise on a trip; investigate decreasing production of products; make plans for a new building	0 1 2 3 4 5 6 7 Y N
15	solve a hard problem; solve an arithmetic problem; give an answer to a problem	0 1 2 3 4 5 6 7 Y N
16	decode a secret message; read unusual handwriting; put together parts to form the whole	0 1 2 3 4 5 6 7 Y N

Rating Scale
As an Individual with a handicapping condition, I am

0 not capable of demonstrating this attribute
1 capable of demonstrating this attribute to a very minimal degree
2 capable of demonstrating this attribute to a minimal degree
3 capable of demonstrating this attribute to a low moderate degree
4 capable of demonstrating this attribute to a moderate degree
5 capable of demonstrating this attribute to a high moderate degree
6 capable of demonstrating this attribute to a high degree
7 capable of demonstrating this attribute to a very high degree

YES/NO Persons with this handicapping condition (Yes, do differ - No, do not differ) from persons non-handicapped in the ability to demonstrate this activity

	Examples of Attribute Activities	Rating
17	think of unusual names for products; produce a new title for a program; think of new ways to make money.	0 1 2 3 4 5 6 7 Y N
18	work with senior citizens; supervise people; change jelling method according to how a person acts	0 1 2 3 4 5 6 7 Y N
19	judge the quality of a design; determine the value of old objects	0 1 2 3 4 5 6 7 Y N
20	keep in time with music; play a melody on an instrument; sing a song in a group	0 1 2 3 4 5 6 7 Y N
21	steer a car; operate a machine; ride a bike	0 1 2 3 4 5 6 7 Y N
22	participate in sports activities; change gear on a stick-shift car	0 1 2 3 4 5 6 7 Y N
23	move quickly; avoid a falling object	0 1 2 3 4 5 6 7 Y N
24	assemble assorted designs into a pattern; lay a foundation; hammer a nail; build a model	0 1 2 3 4 5 6 7 Y N
25	wrap a gift; bat a ball; move a heavy object	0 1 2 3 4 5 6 7 Y N

Rating Scale
As an individual with a handicapping condition, I am

0 not capable of demonstrating this attribute
1 capable of demonstrating this attribute to a very minimal degree
2 capable of demonstrating this attribute to a minimal degree
3 capable of demonstrating this attribute to a low moderate degree
4 capable of demonstrating this attribute to a moderate degree
5 capable of demonstrating this attribute to a high moderate degree
6 capable of demonstrating this attribute to a high degree
7 capable of demonstrating this attribute to a very high degree

YES/NO Persons with this handicapping condition (Yes, do differ - No, do not differ) from persons non-handicapped in the ability to demonstrate this activity

	Examples of Attribute Activities	Rating
26	fasten a watch band; thread a needle; put in a light bulb; write by hand	0 1 2 3 4 5 6 7 Y N
27	paint a picture; shoot a gun; use makeup on the face; pour water from a pitcher to a glass	0 1 2 3 4 5 6 7 Y N
28	throw a ball; drive a stake into ground	0 1 2 3 4 5 6 7 Y N
29	carry goods from one place to another; load and unload heavy boxes; lift weights	0 1 2 3 4 5 6 7 Y N
30	exercise; dance for a long time; hammer a nail	0 1 2 3 4 5 6 7 Y N
31	paint from a ladder; walk a straight line; climb a tree; walk across one end of a room to the other end	0 1 2 3 4 5 6 7 Y N
32	do exercises for a long time	0 1 2 3 4 5 6 7 Y N
33	read small print; look at a gem; proof read written materials	0 1 2 3 4 5 6 7 Y N
34	spot holes in a highway; read numbers from a distance; watch for people crossing the streets	0 1 2 3 4 5 6 7 Y N

Rating Scale
As an individual with a handicapping condition, I am

0 not capable of demonstrating this attribute
1 capable of demonstrating this attribute to a very minimal degree
2 capable of demonstrating this attribute to a minimal degree
3 capable of demonstrating this attribute to a low moderate degree
4 capable of demonstrating this attribute to a moderate degree
5 capable of demonstrating this attribute to a high moderate degree
6 capable of demonstrating this attribute to a high degree
7 capable of demonstrating this attribute to a very high degree

YES/NO Persons with this handicapping condition (Yes, do differ - No, do not differ) from persons non-handicapped in the ability to demonstrate this activity

	Examples of Attribute Activities	Rating
35	move object with a large machine; approach a car within a safe distance; land a plane; hit a ball; dock a boat	0 1 2 3 4 5 6 7 Y N
36	choose colors; mix shades of paint; see the colors in the rainbow	0 1 2 3 4 5 6 7 Y N
37	listen for different sounds; take messages over the telephone; tune instruments	0 1 2 3 4 5 6 7 Y N
38	examine an object by feeling for defects; identify objects in a bag without looking	0 1 2 3 4 5 6 7 Y N

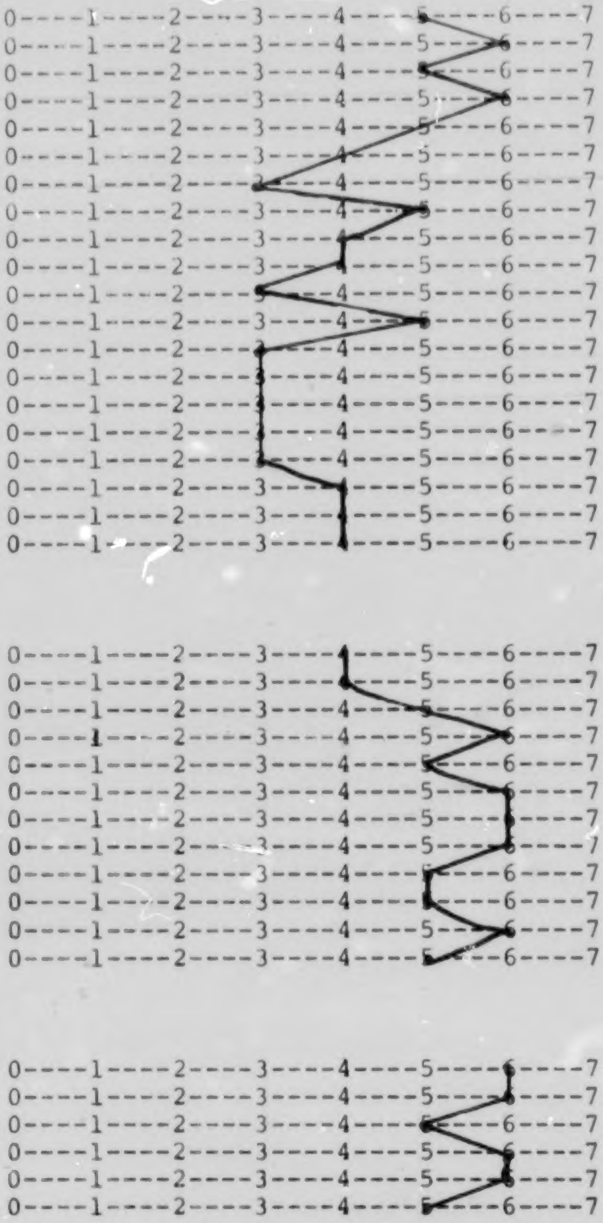
APPENDIX W

TOTAL PROFILES OF HANDICAPPED POPULATION

MEDIAN PROFILE OF ATTRIBUTES-BY-EXCEPTIONALITY

TOTAL RESPONDENTS

Handicapping Condition: Mental Retardation



Human Attributes		Rating Scale
A. Cognitive Attribute		
1.	Closure	0----1----2----3----4----5----6----7
2.	Form Perception	0----1----2----3----4----5----6----7
3.	Perceptual Speed	0----1----2----3----4----5----6----7
4.	Spatial Scanning	0----1----2----3----4----5----6----7
5.	Spatial Orientation	0----1----2----3----4----5----6----7
6.	Visualization	0----1----2----3----4----5----6----7
7.	Number Facility	0----1----2----3----4----5----6----7
8.	Memory	0----1----2----3----4----5----6----7
9.	Verbal Comprehension	0----1----2----3----4----5----6----7
10.	Grammar	0----1----2----3----4----5----6----7
11.	Spelling	0----1----2----3----4----5----6----7
12.	Expressional Fluency	0----1----2----3----4----5----6----7
13.	Ideational Fluency	0----1----2----3----4----5----6----7
14.	Sensitivity to Problems	0----1----2----3----4----5----6----7
15.	Deductive Reasoning	0----1----2----3----4----5----6----7
16.	Inductive Reasoning	0----1----2----3----4----5----6----7
17.	Originality	0----1----2----3----4----5----6----7
18.	Social Intelligence	0----1----2----3----4----5----6----7
19.	Aesthetic Judgment	0----1----2----3----4----5----6----7
20.	Musical Aptitude	0----1----2----3----4----5----6----7
B. Psychomotor Attribute		
21.	Control Precision	0----1----2----3----4----5----6----7
22.	Multilimb Coordination	0----1----2----3----4----5----6----7
23.	Reaction Time	0----1----2----3----4----5----6----7
24.	Eye-hand Coordination	0----1----2----3----4----5----6----7
25.	Manual Dexterity	0----1----2----3----4----5----6----7
26.	Finger Dexterity	0----1----2----3----4----5----6----7
27.	Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28.	Explosive Strength	0----1----2----3----4----5----6----7
29.	Static Strength	0----1----2----3----4----5----6----7
30.	Dynamic Strength	0----1----2----3----4----5----6----7
31.	Body Equilibrium	0----1----2----3----4----5----6----7
32.	Stamina	0----1----2----3----4----5----6----7
C. Sensory Capacity Attribute		
33.	Near Visual Acuity	0----1----2----3----4----5----6----7
34.	Far Visual Acuity	0----1----2----3----4----5----6----7
35.	Depth Perception	0----1----2----3----4----5----6----7
36.	Color Discrimination	0----1----2----3----4----5----6----7
37.	Auditory Acuity	0----1----2----3----4----5----6----7
38.	Tactual Discrimination	0----1----2----3----4----5----6----7

MEDIAN PROFILE OF ATTRIBUTES-BY-EXCEPTIONALITY

TOTAL RESPONDENTS

Handicapping Condition: Blind

Human Attributes — Rating Scale

A. Cognitive Attribute

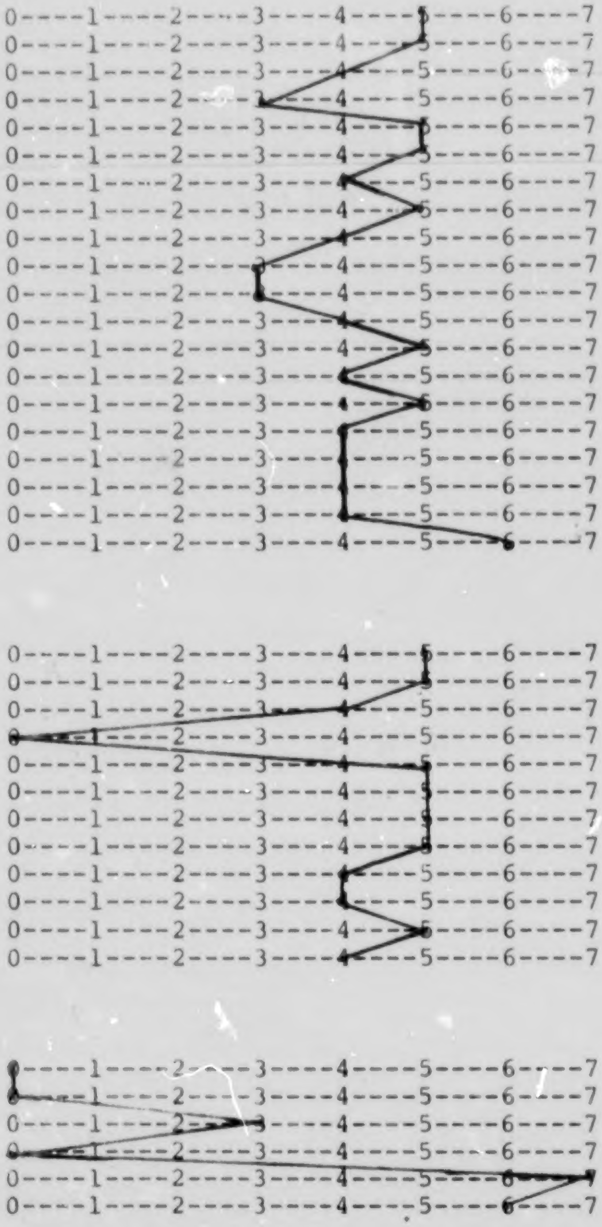
1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

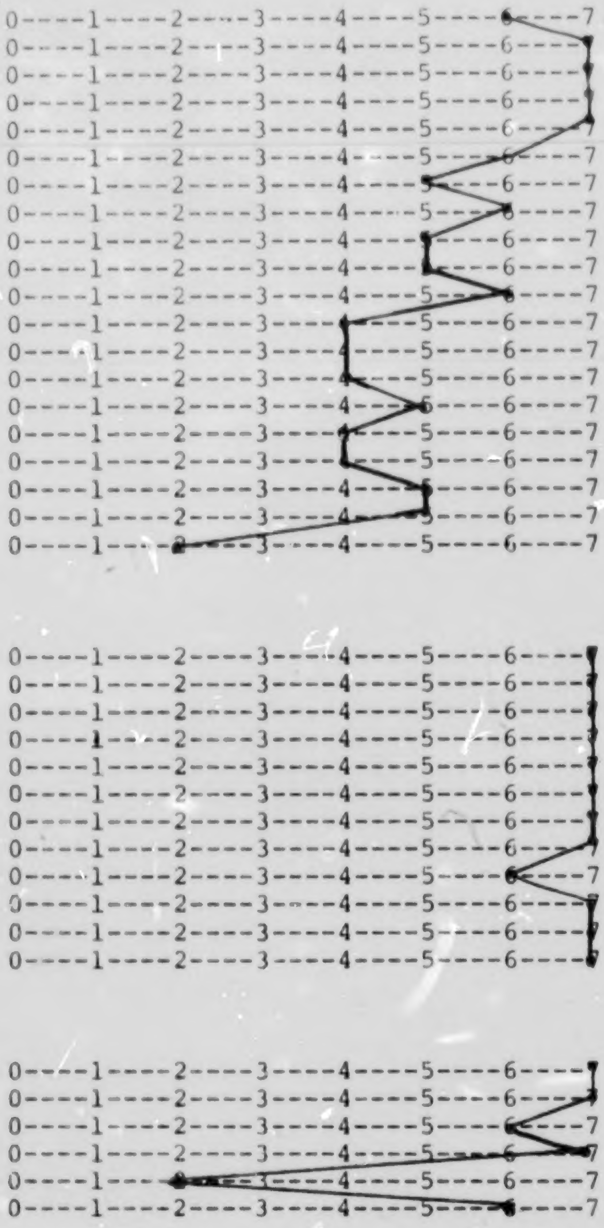


MEDIAN PROFILE OF ATTRIBUTES-BY-EXCEPTIONALITY

TOTAL RESPONDENTS

Handicapping Condition: Deaf

Human Attributes — Rating Scale



A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

MEDIAN PROFILE OF ATTRIBUTES-BY-EXCEPTIONALITY

TOTAL RESPONDENTS

Handicapping Condition: Non Sensory Physical

Human Attributes	Rating Scale

A. Cognitive Attribute

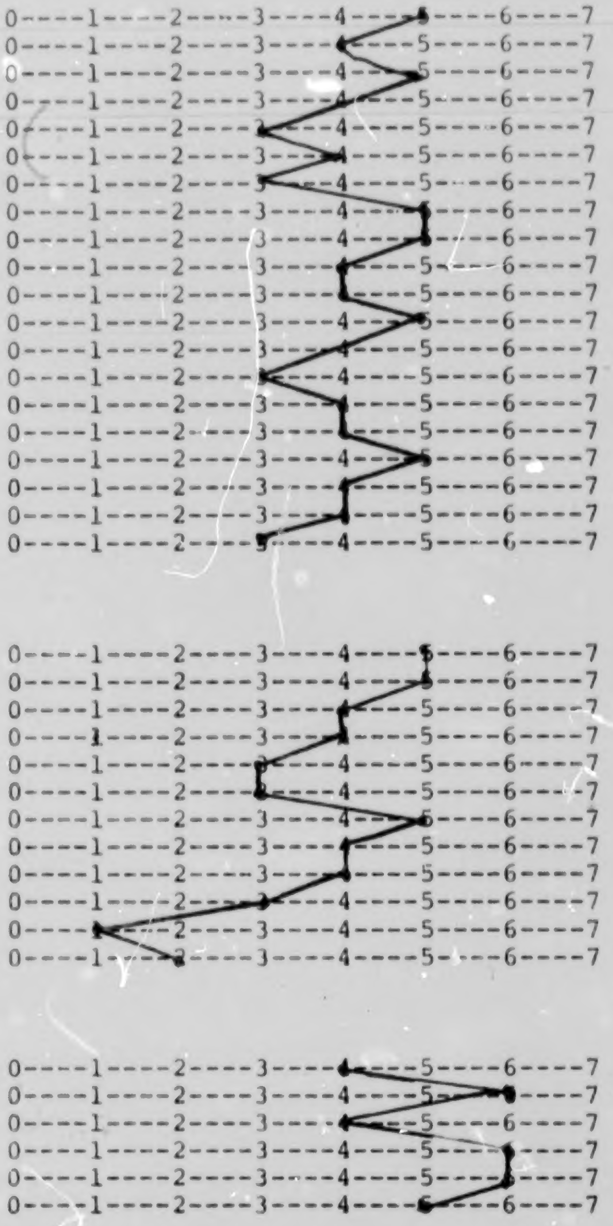
1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

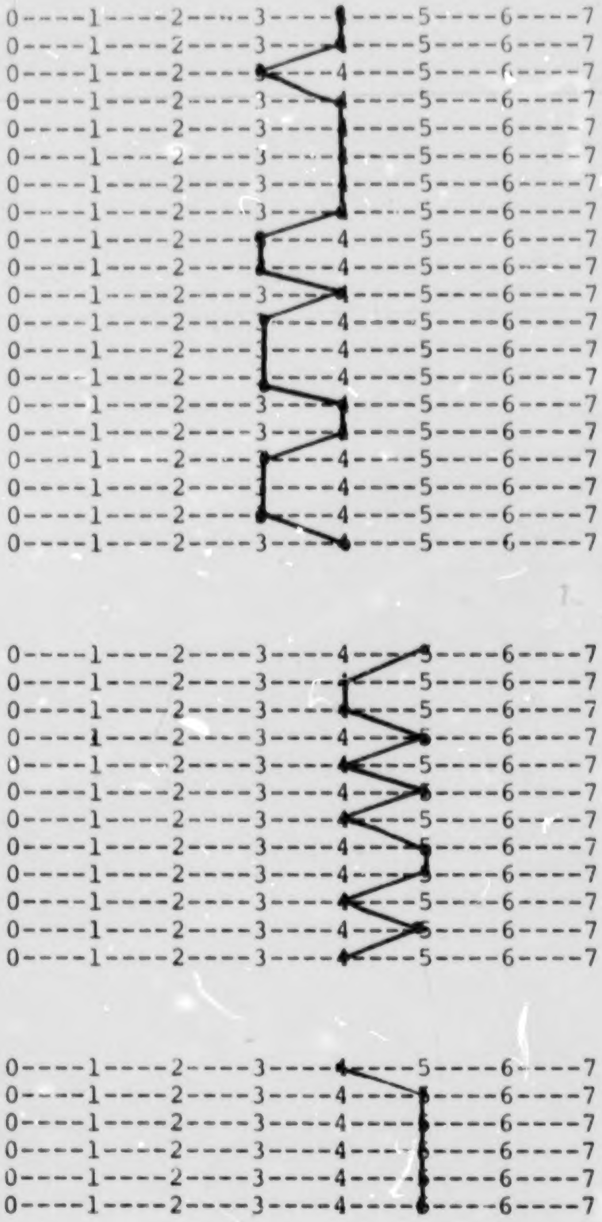


MEDIAN PROFILE OF ATTRIBUTES-BY-EXCEPTIONALITY

TOTAL RESPONDENTS

Handicapping Condition: Emotionally Disturbed

Human Attributes — Rating Scale



A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

MEDIAN PROFILE OF ATTRIBUTES-BY-EXCEPTIONALITY

TOTAL RESPONDENTS

Handicapping Condition: Partially Sighted

Human Attributes — Rating Scale

A. Cognitive Attribute

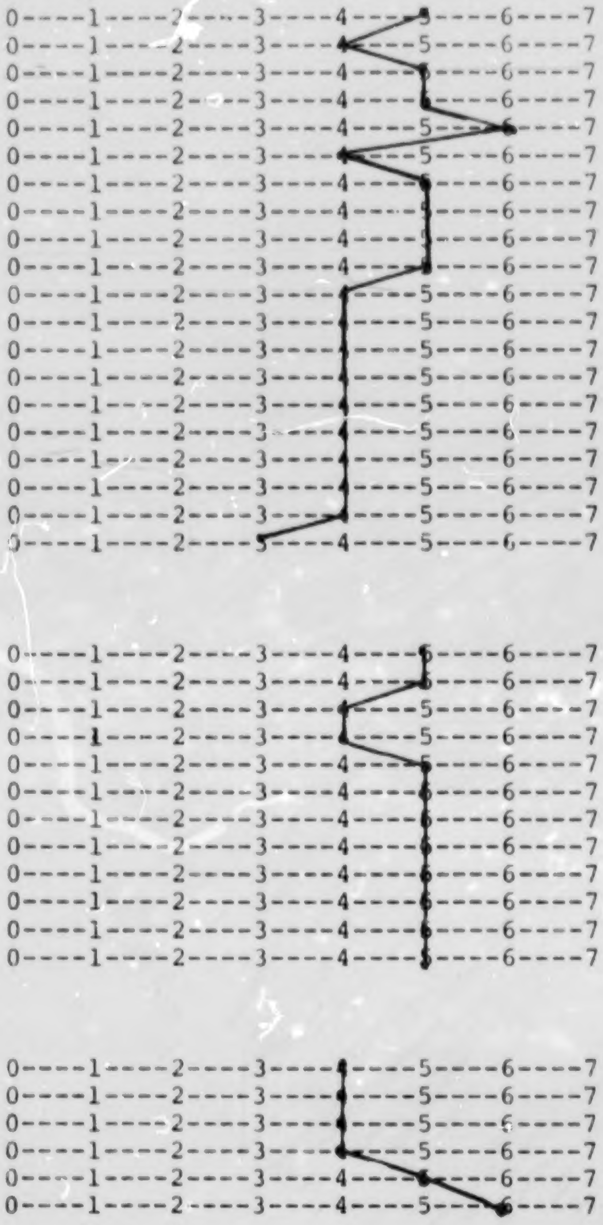
1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



W-6

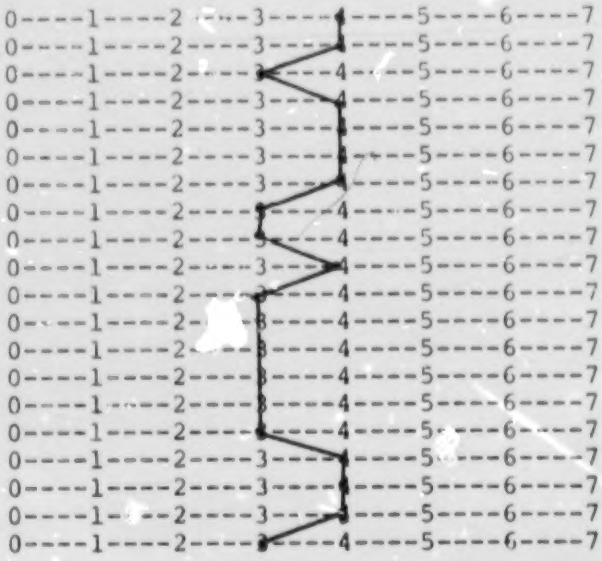
MEDIAN PROFILE OF ATTRIBUTES-BY-EXCEPTIONALITY

TOTAL RESPONDENTS

Handicapping Condition: Learning Disabled

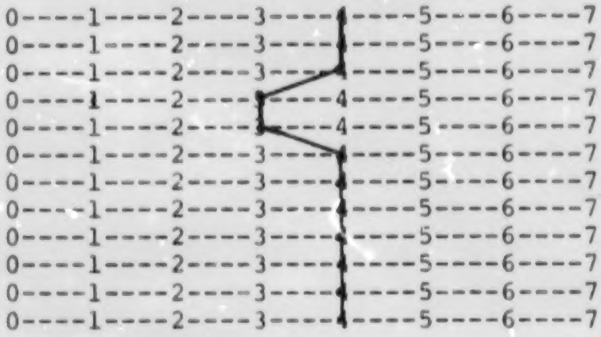
Human Attributes — Rating Scale

A. Cognitive Attribute



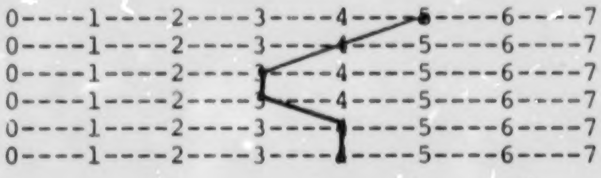
1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute



21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute



33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

MEDIAN PROFILE OF ATTRIBUTES-BY-EXCEPTIONALITY

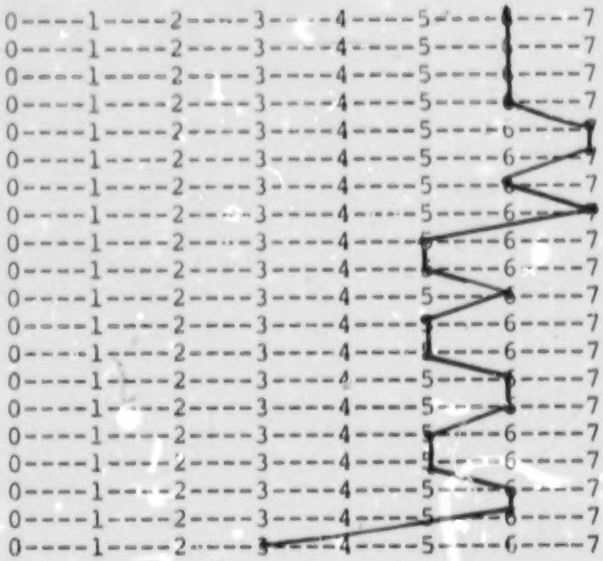
TOTAL RESPONDENTS

Handicapping Condition: Hard of Hearing

Human Attributes Rating Scale

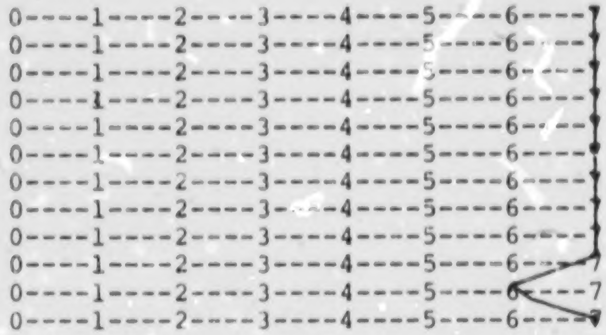
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



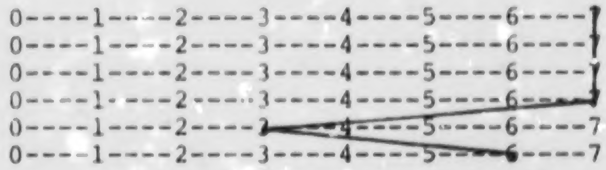
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



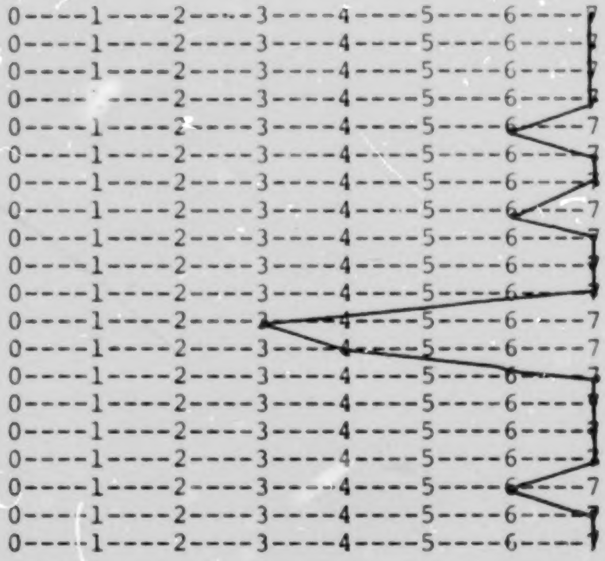
MEDIAN PROFILE OF ATTRIBUTES-BY-EXCEPTIONALITY

TOTAL RESPONDENTS

Handicapping Condition: Speech Impairment

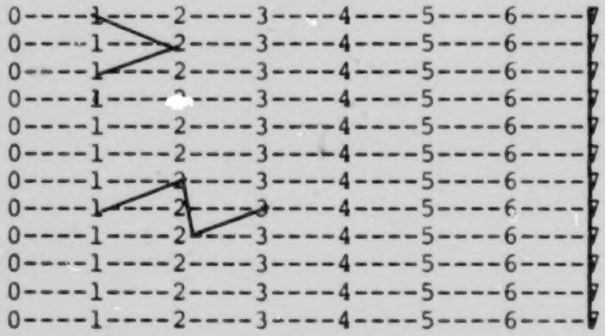
Human Attributes — Rating Scale

A. Cognitive Attribute



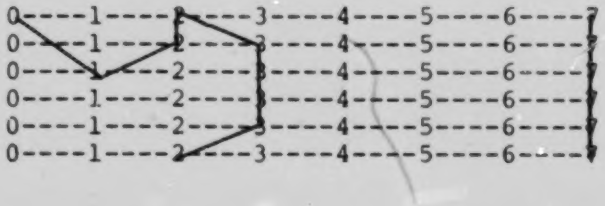
1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute



21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute



33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

APPENDIX X

PROFILES OF THE THREE OCCUPATIONS
JOB ACTIVITY-BY-ATTRIBUTE INSTRUMENT

Profile of Human Attributes for Job Activities

Occupation: General Secretary

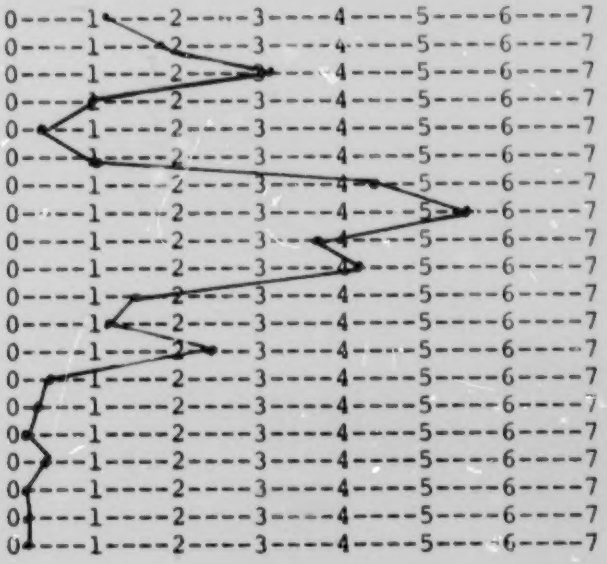
Job Activity:

Read and route incoming mail.

Human Attributes — **Rating Scale**

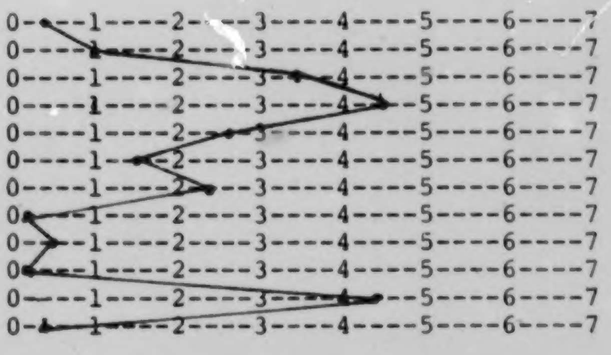
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



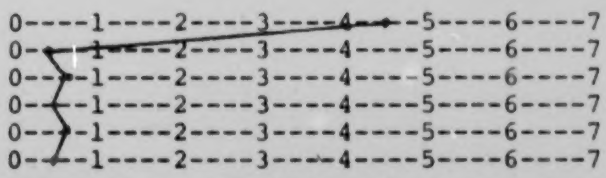
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



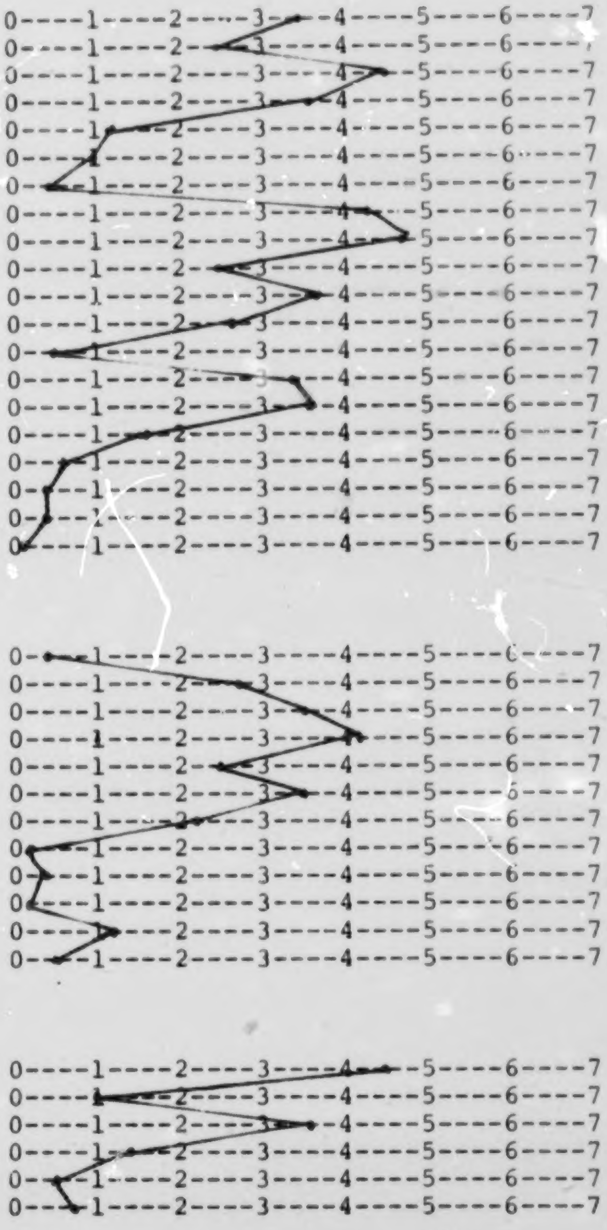
Profile of Human Attributes for Job Activities

Occupation: General Secretary

Job Activity:

Locate and attach appropriate file to correspondence to be answered by employer.

Human Attributes — Rating Scale



A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

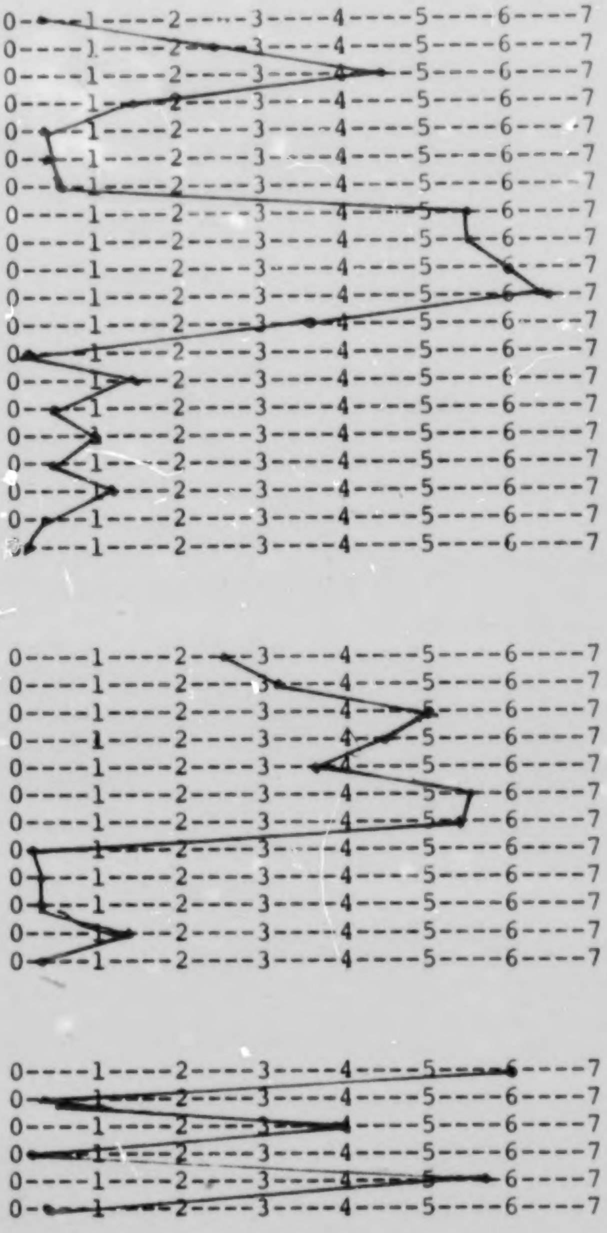
Profile of Human Attributes for Job Activities

Occupation: General Secretary

Job Activity:

Take dictation in shorthand or on Stenotype machine.

Human Attributes — Rating Scale



A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

Profile of Human Attributes for Job Activities

Occupation: General Secretary

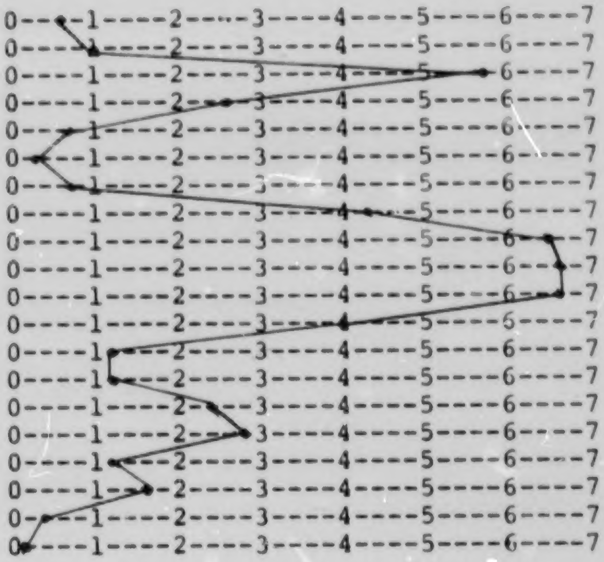
Job Activity:

Transcribe notes on typewriter or transcribe from voice recordings.

Human Attributes — **Rating Scale**

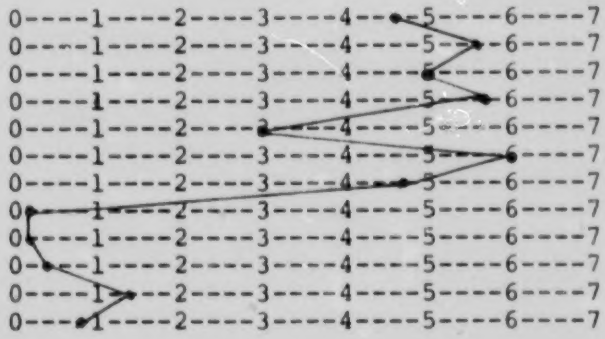
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



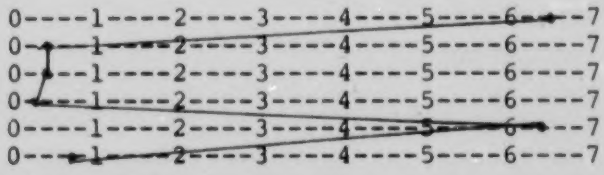
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



Profile of Human Attributes for Job Activities

Occupation: General Secretary

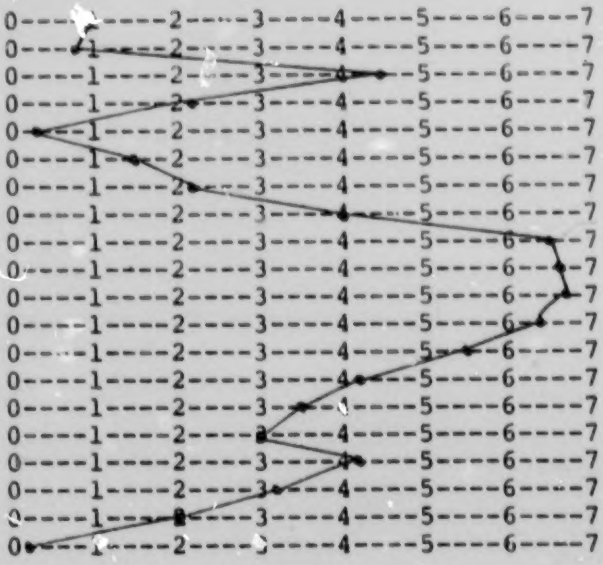
Job Activity:

Compose routine correspondence.

Human Attributes | **Rating Scale**

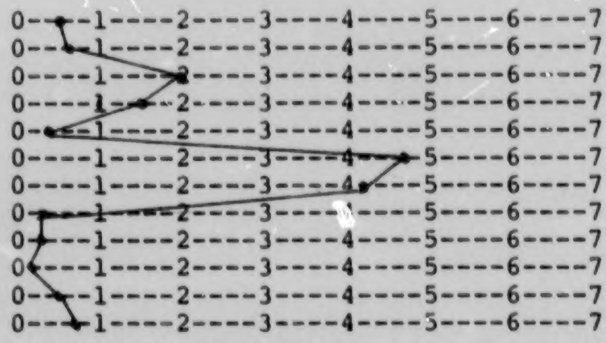
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



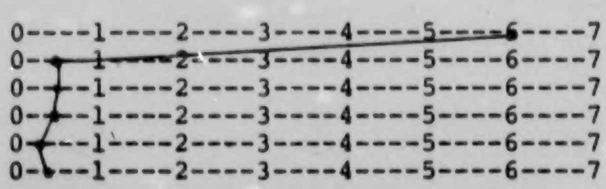
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



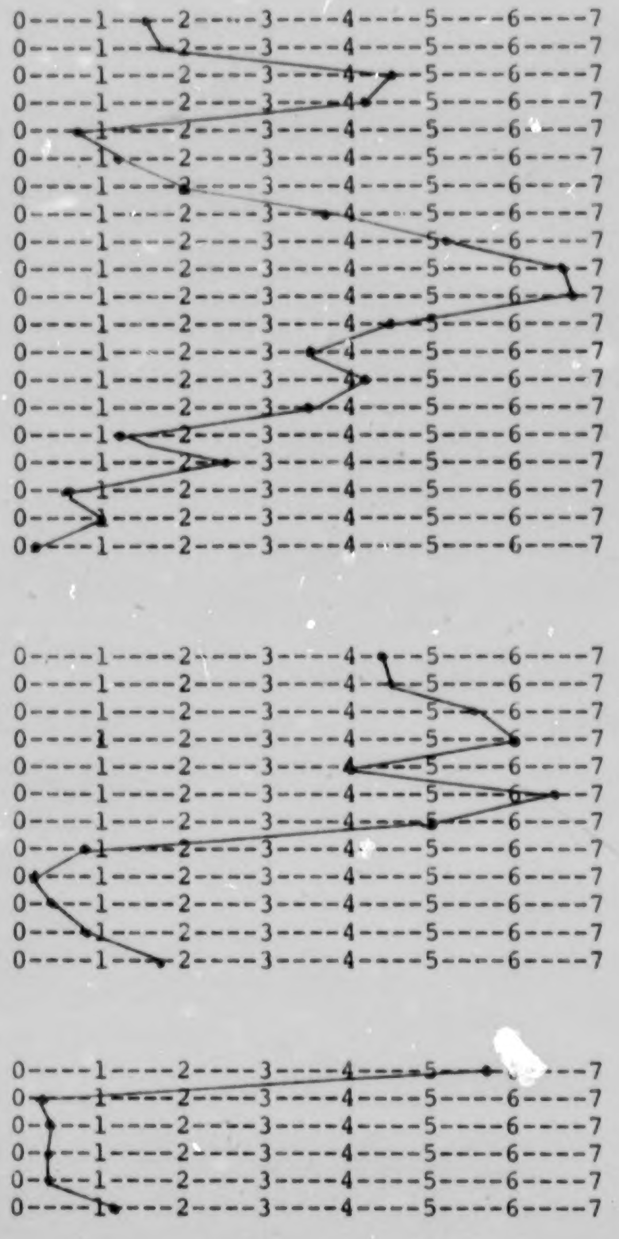
Profile of Human Attributes for Job Activities

Occupation: General Secretary

Job Activity:

Type routine correspondence.

Human Attributes — **Rating Scale**



A. Cognitive Attribute

1. Closure 0----1----2----3----4----5----6----7
2. Form Perception 0----1----2----3----4----5----6----7
3. Perceptual Speed 0----1----2----3----4----5----6----7
4. Spatial Scanning 0----1----2----3----4----5----6----7
5. Spatial Orientation 0----1----2----3----4----5----6----7
6. Visualization 0----1----2----3----4----5----6----7
7. Number Facility 0----1----2----3----4----5----6----7
8. Memory 0----1----2----3----4----5----6----7
9. Verbal Comprehension 0----1----2----3----4----5----6----7
10. Grammar 0----1----2----3----4----5----6----7
11. Spelling 0----1----2----3----4----5----6----7
12. Expressional Fluency 0----1----2----3----4----5----6----7
13. Ideational Fluency 0----1----2----3----4----5----6----7
14. Sensitivity to Problems 0----1----2----3----4----5----6----7
15. Deductive Reasoning 0----1----2----3----4----5----6----7
16. Inductive Reasoning 0----1----2----3----4----5----6----7
17. Originality 0----1----2----3----4----5----6----7
18. Social Intelligence 0----1----2----3----4----5----6----7
19. Aesthetic Judgment 0----1----2----3----4----5----6----7
20. Musical Aptitude 0----1----2----3----4----5----6----7

B. Psychomotor Attribute

21. Control Precision 0----1----2----3----4----5----6----7
22. Multilimb Coordination 0----1----2----3----4----5----6----7
23. Reaction Time 0----1----2----3----4----5----6----7
24. Eye-hand Coordination 0----1----2----3----4----5----6----7
25. Manual Dexterity 0----1----2----3----4----5----6----7
26. Finger Dexterity 0----1----2----3----4----5----6----7
27. Arm-Hand Steadiness 0----1----2----3----4----5----6----7
28. Explosive Strength 0----1----2----3----4----5----6----7
29. Static Strength 0----1----2----3----4----5----6----7
30. Dynamic Strength 0----1----2----3----4----5----6----7
31. Body Equilibrium 0----1----2----3----4----5----6----7
32. Stamina 0----1----2----3----4----5----6----7

C. Sensory Capacity Attribute

33. Near Visual Acuity 0----1----2----3----4----5----6----7
34. Far Visual Acuity 0----1----2----3----4----5----6----7
35. Depth Perception 0----1----2----3----4----5----6----7
36. Color Discrimination 0----1----2----3----4----5----6----7
37. Auditory Acuity 0----1----2----3----4----5----6----7
38. Tactual Discrimination 0----1----2----3----4----5----6----7

Profile of Human Attributes for Job Activities

Occupation: General Secretary

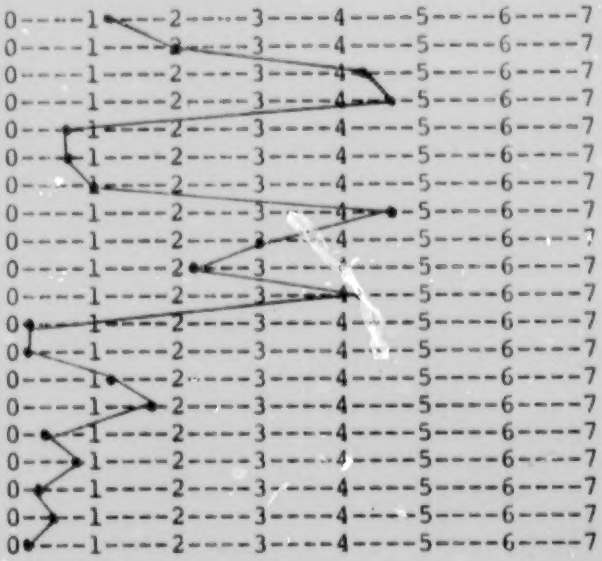
Job Activity:

File correspondence and other records.

Human Attributes — **Rating Scale**

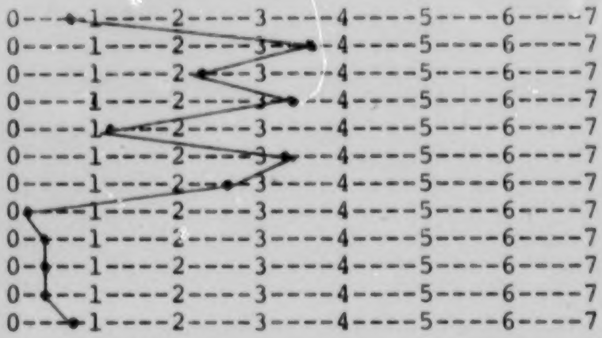
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



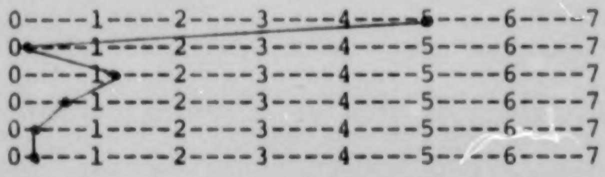
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



Profile of Human Attributes for Job Activities

Occupation: General Secretary

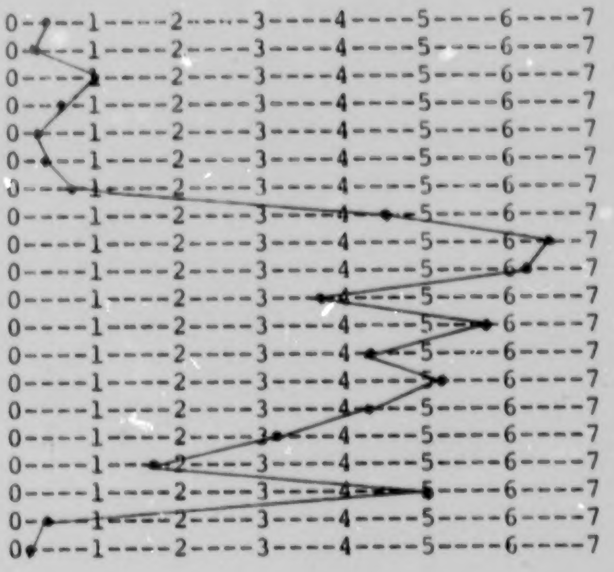
Job Activity:

Answer telephone and give information to callers.

Human Attributes — **Rating Scale**

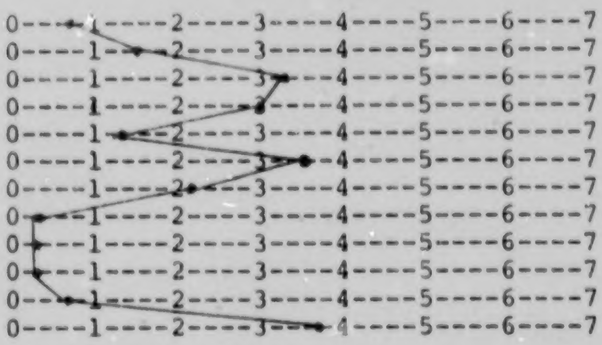
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



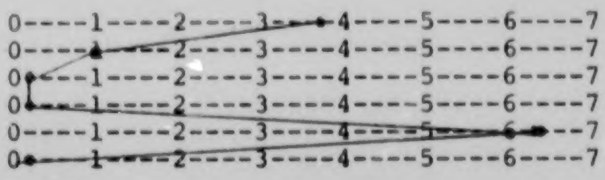
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



Profile of Human Attributes for Job Activities

Occupation: General Secretary

Job Activity:

Route calls to appropriate officials.

Human Attributes — **Rating Scale**

A. Cognitive Attribute

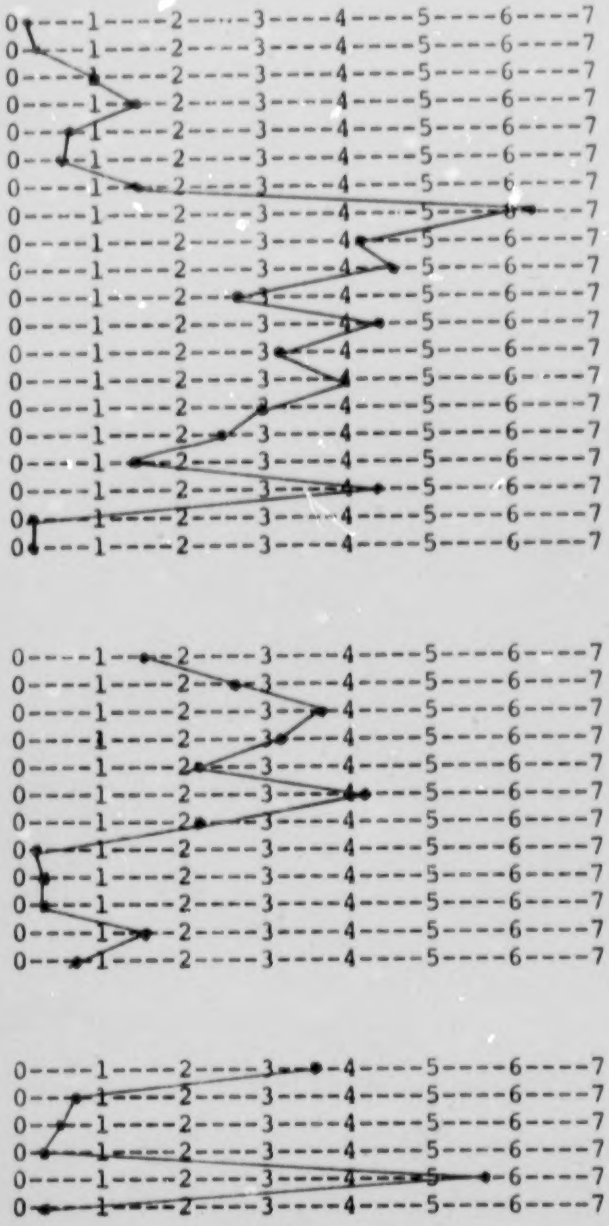
1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



Profile of Human Attributes for Job Activities

Occupation: General Secretary

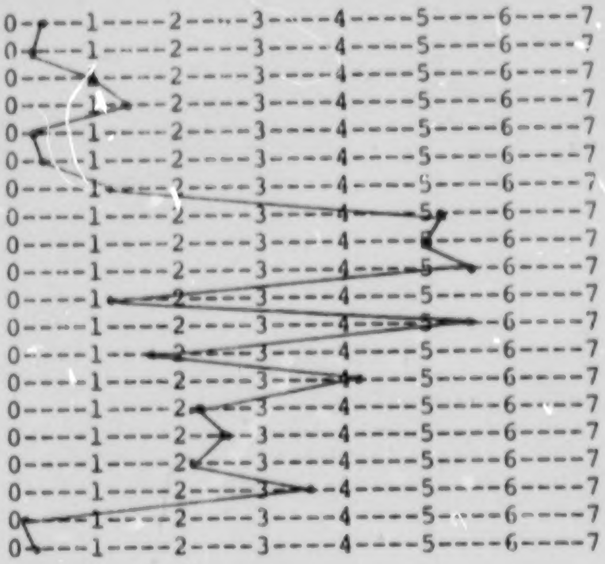
Job Activity:

Place outgoing calls.

Human Attributes — **Rating Scale**

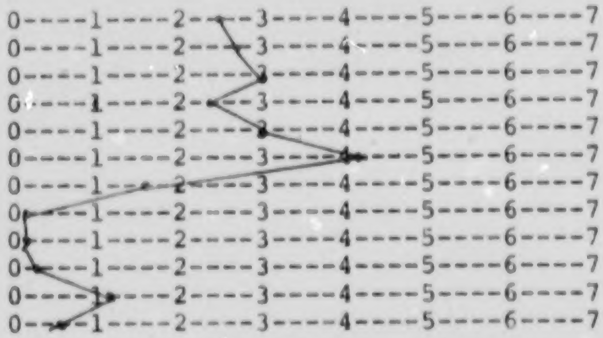
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



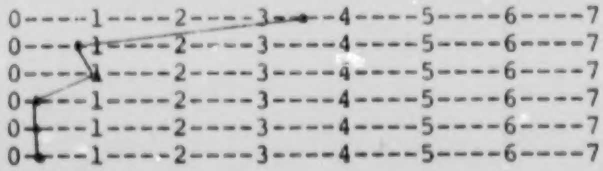
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



Profile of Human Attributes for Job Activities

Occupation: General Secretary

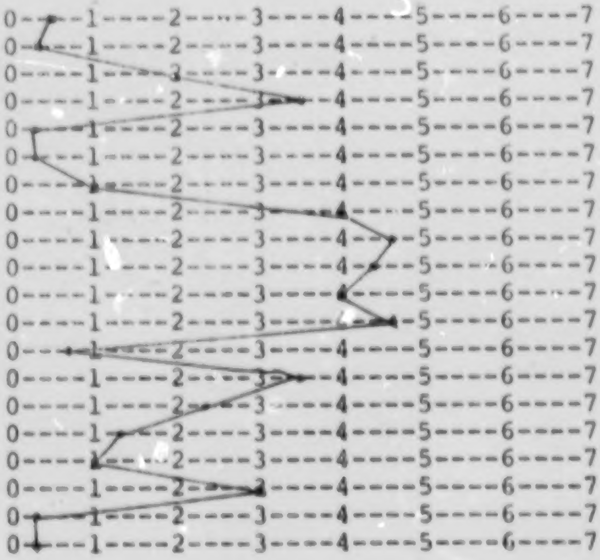
Job Activity:

Schedule appointments for employer.

Human Attributes — **Rating Scale**

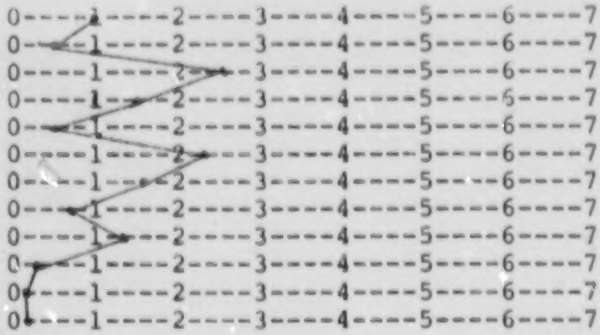
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



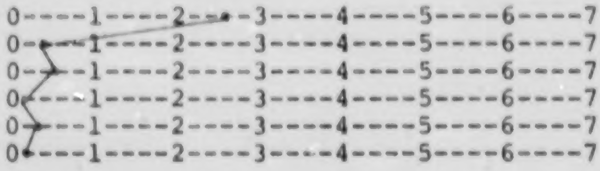
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



Profile of Human Attributes for Job Activities

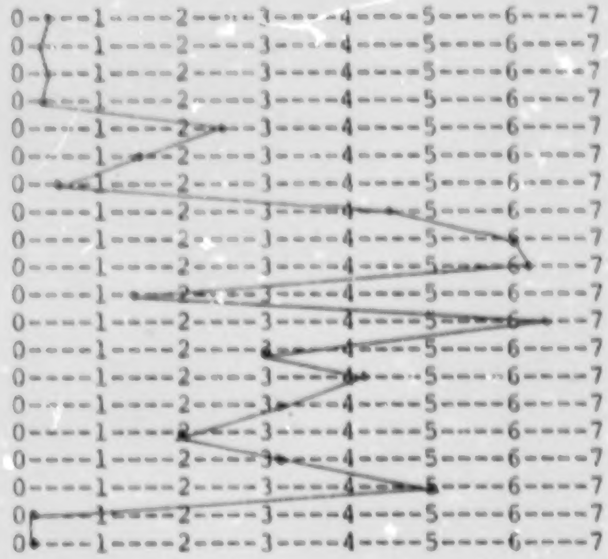
Occupation: General Secretary

Job Activity:

Greet visitors, ascertain nature of business, and conduct visitors to employer or appropriate person.

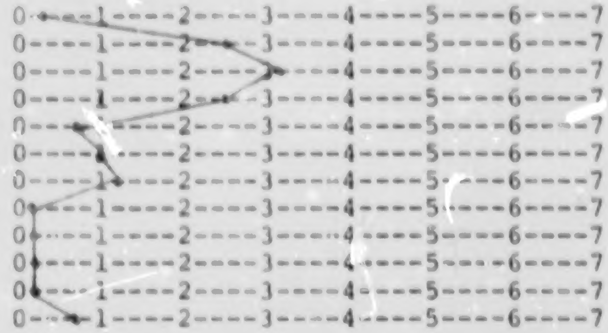
Human Attributes — **Rating Scale**

A. Cognitive Attribute



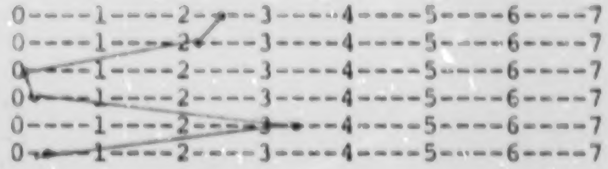
1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute



21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute



33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

Profile of Human Attributes for Job Activities

Occupation: General Secretary

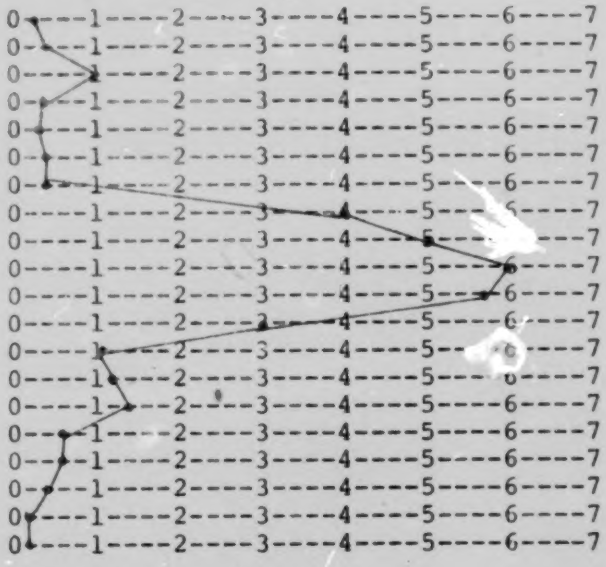
Job Activity:

Take dictation.

Human Attributes	Rating Scale

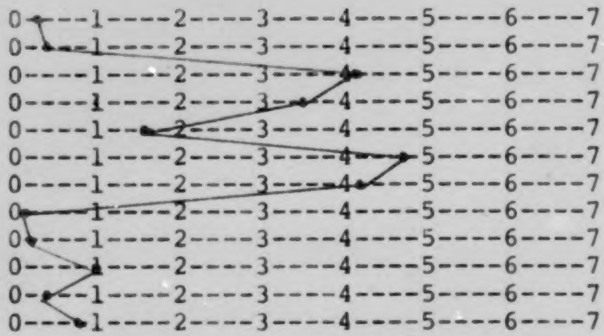
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



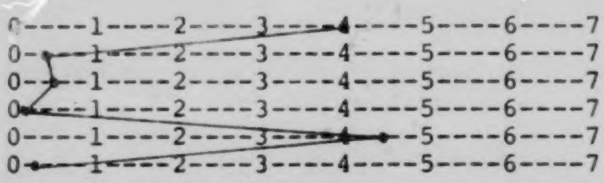
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



Profile of Human Attributes for Job Activities

Occupation: General Secretary

Job Activity:

Arrange travel schedule and reservations.

Human Attributes	Rating Scale

A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
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12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
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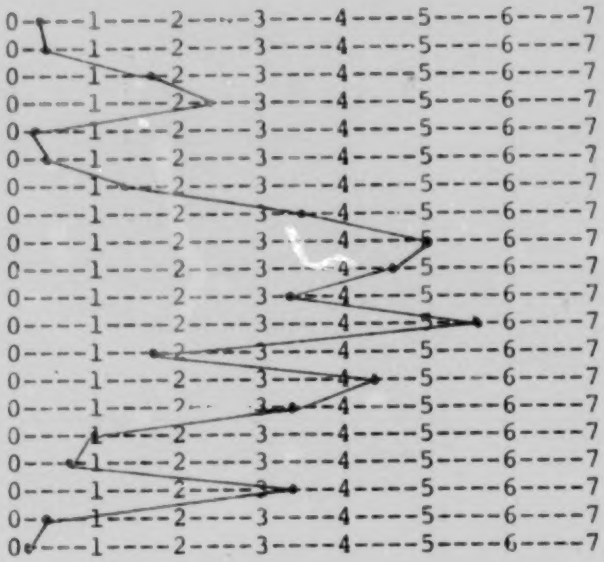
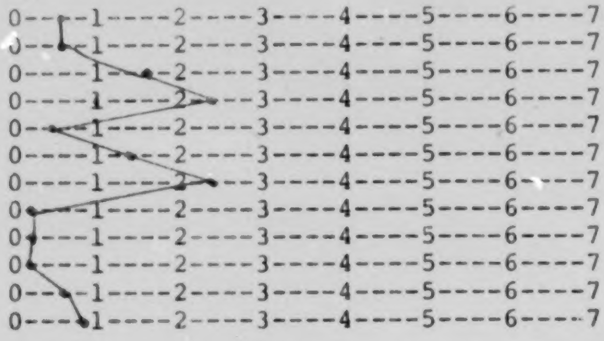
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



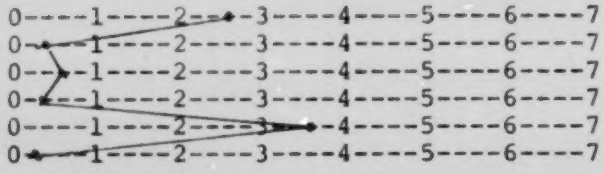
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



Profile of Human Attributes for Job Activities

Occupation: General Secretary

Job Activity:

Compile and type statistical reports.

Human Attributes — **Rating Scale**

A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
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12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

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26. Finger Dexterity
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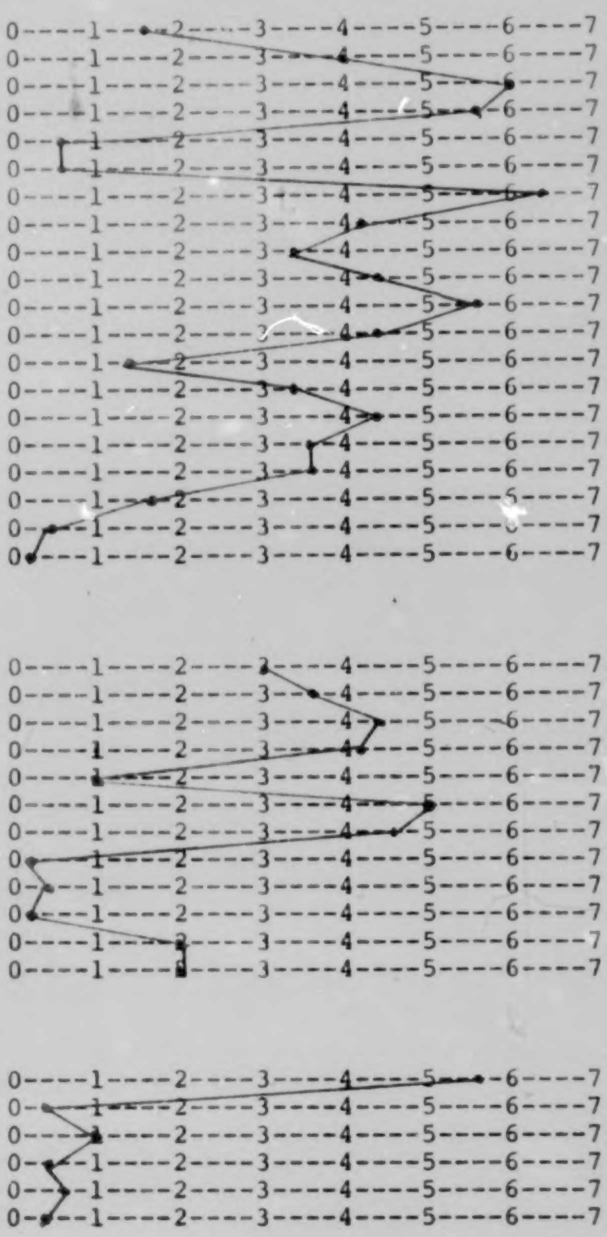
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



Profile of Human Attributes for Job Activities

Occupation: General Secretary

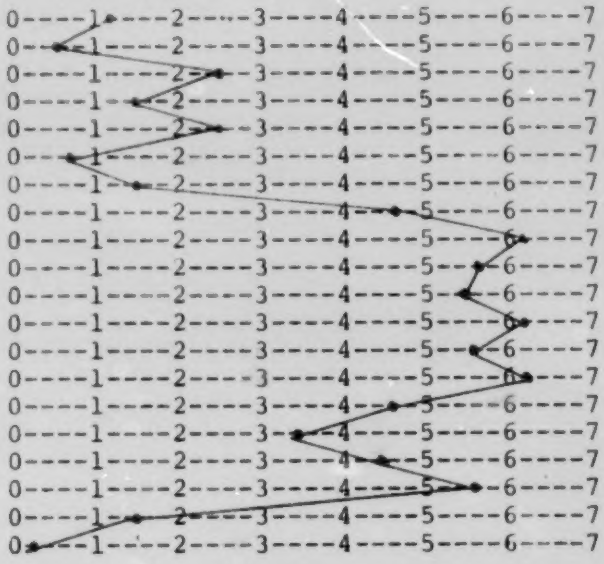
Job Activity:

Supervise clerical workers.

Human Attributes **Rating Scale**

A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
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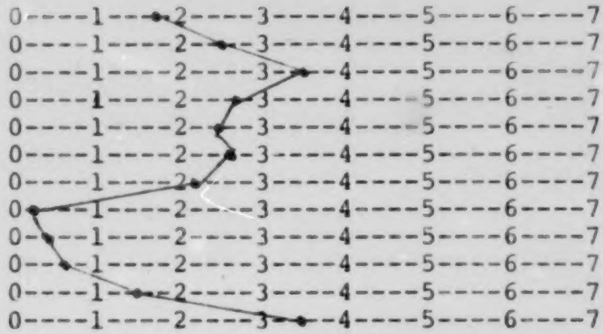
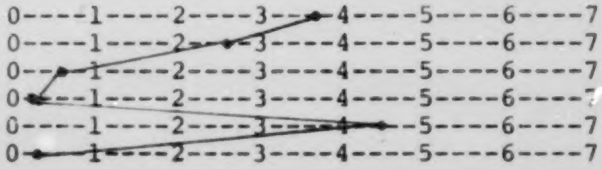
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



Profile of Human Attributes for Job Activities

Occupation: General Secretary

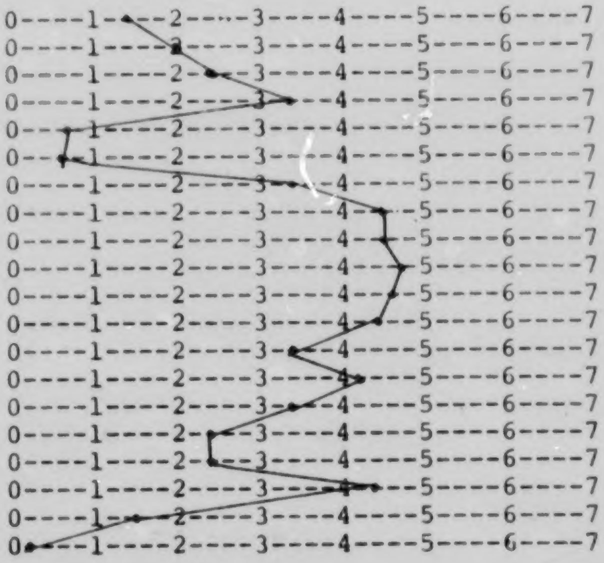
Job Activity:

Keep personnel records.

Human Attributes | **Rating Scale**

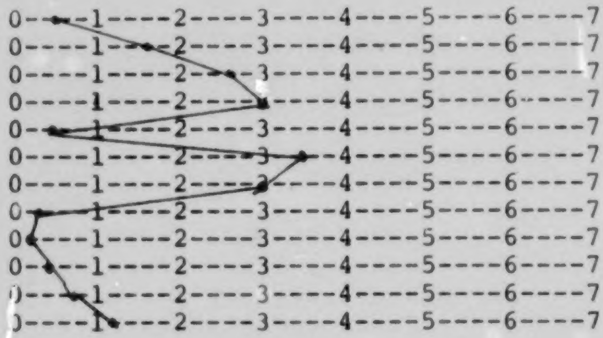
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



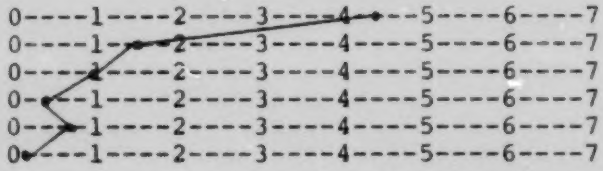
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



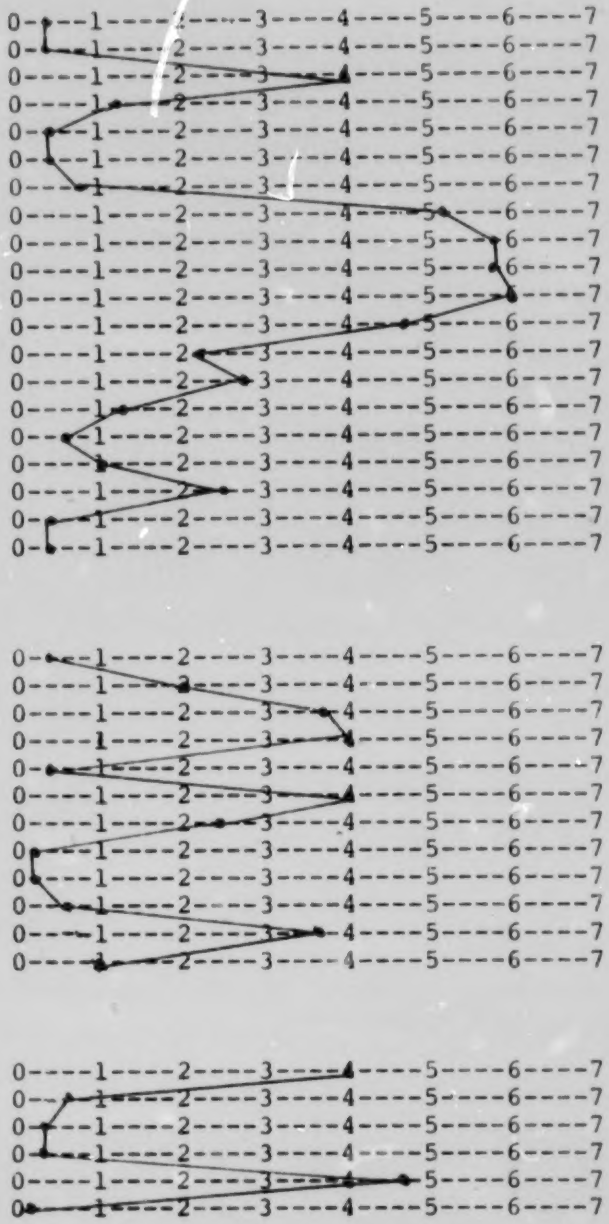
Profile of Human Attributes for Job Activities

Occupation: General Secretary

Job Activity:

Record minutes of staff meetings.

Human Attributes — Rating Scale



A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
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12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

Profile of Human Attributes for Job Activities

Occupation: Automotive Mechanic

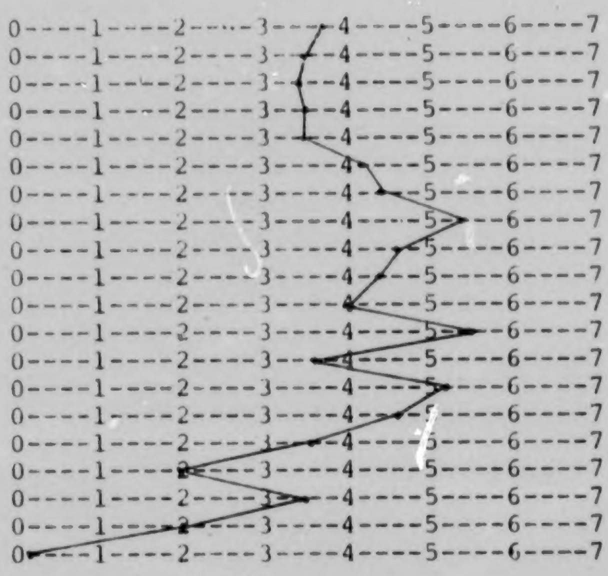
Job Activity:

Examine vehicle and discuss with customer or automobile-repair-service salesman, automobile tester, etc., nature and extent of damage or malfunction.

Human Attributes — Rating Scale

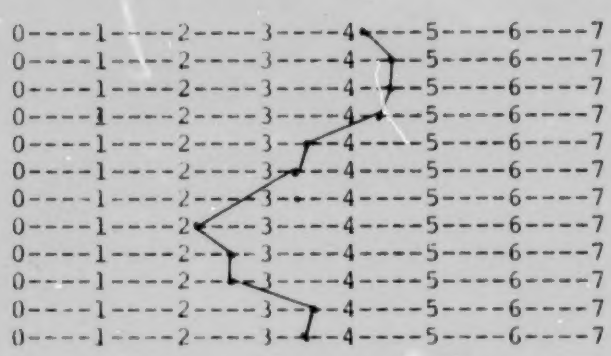
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



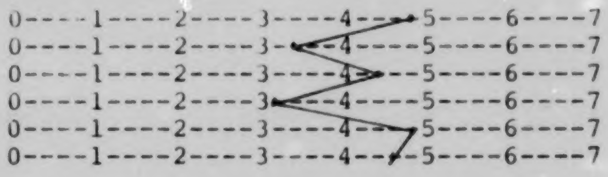
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-Hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



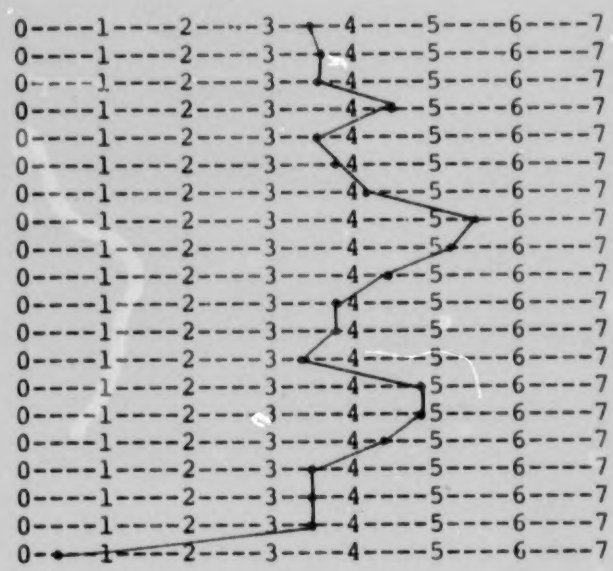
Profile of Human Attributes for Job Activities

Occupation: Automotive Mechanic

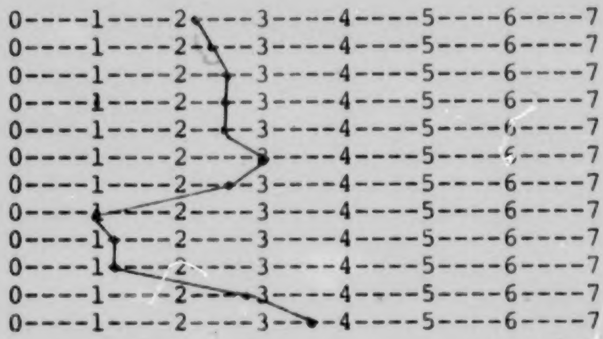
Job Activity:

Plan work procedure, using charts, technical manuals, and experience.

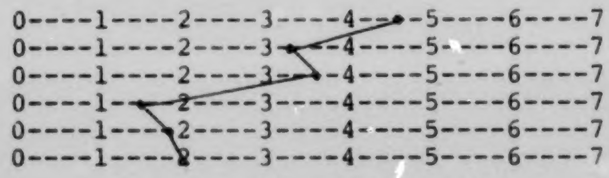
Human Attributes	Rating Scale
A. Cognitive Attribute	
1. Closure	0----1----2----3----4----5----6----7
2. Form Perception	0----1----2----3----4----5----6----7
3. Perceptual Speed	0----1----2----3----4----5----6----7
4. Spatial Scanning	0----1----2----3----4----5----6----7
5. Spatial Orientation	0----1----2----3----4----5----6----7
6. Visualization	0----1----2----3----4----5----6----7
7. Number Facility	0----1----2----3----4----5----6----7
8. Memory	0----1----2----3----4----5----6----7
9. Verbal Comprehension	0----1----2----3----4----5----6----7
10. Grammar	0----1----2----3----4----5----6----7
11. Spelling	0----1----2----3----4----5----6----7
12. Expressional Fluency	0----1----2----3----4----5----6----7
13. Ideational Fluency	0----1----2----3----4----5----6----7
14. Sensitivity to Problems	0----1----2----3----4----5----6----7
15. Deductive Reasoning	0----1----2----3----4----5----6----7
16. Inductive Reasoning	0----1----2----3----4----5----6----7
17. Originality	0----1----2----3----4----5----6----7
18. Social Intelligence	0----1----2----3----4----5----6----7
19. Aesthetic Judgment	0----1----2----3----4----5----6----7
20. Musical Aptitude	0----1----2----3----4----5----6----7



Human Attributes	Rating Scale
B. Psychomotor Attribute	
21. Control Precision	0----1----2----3----4----5----6----7
22. Multilimb Coordination	0----1----2----3----4----5----6----7
23. Reaction Time	0----1----2----3----4----5----6----7
24. Eye-hand Coordination	0----1----2----3----4----5----6----7
25. Manual Dexterity	0----1----2----3----4----5----6----7
26. Finger Dexterity	0----1----2----3----4----5----6----7
27. Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28. Explosive Strength	0----1----2----3----4----5----6----7
29. Static Strength	0----1----2----3----4----5----6----7
30. Dynamic Strength	0----1----2----3----4----5----6----7
31. Body Equilibrium	0----1----2----3----4----5----6----7
32. Stamina	0----1----2----3----4----5----6----7



Human Attributes	Rating Scale
C. Sensory Capacity Attribute	
33. Near Visual Acuity	0----1----2----3----4----5----6----7
34. Far Visual Acuity	0----1----2----3----4----5----6----7
35. Depth Perception	0----1----2----3----4----5----6----7
36. Color Discrimination	0----1----2----3----4----5----6----7
37. Auditory Acuity	0----1----2----3----4----5----6----7
38. Tactual Discrimination	0----1----2----3----4----5----6----7



Profile of Human Attributes for Job Activities

Occupation: Automotive Mechanic

Job Activity:

Raise vehicle, using hydraulic jack or hoist, to gain access to mechanical units bolted to underside of vehicle.

Human Attributes — **Rating Scale**

A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
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17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
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24. Eye-hand Coordination
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30. Dynamic Strength
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C. Sensory Capacity Attribute

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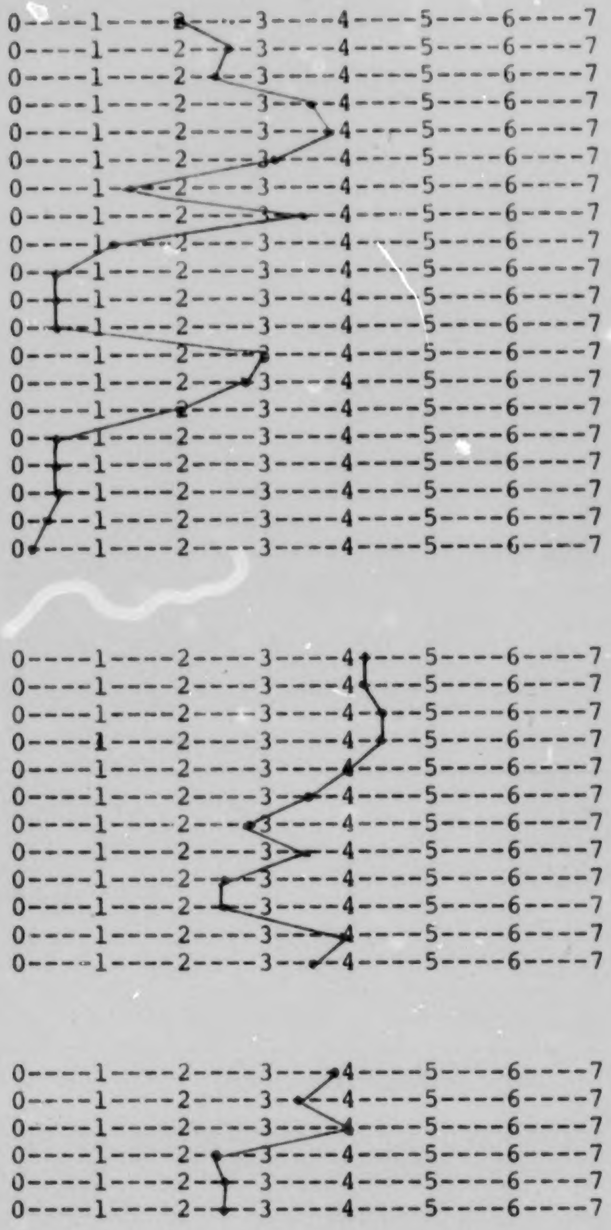
38. Tactual Discrimination



Profile of Human Attributes for Job Activities

Occupation: Automotive Mechanic

Job Activity:

Remove unit, such as engine, transmission, or differential, using wrenches and hoist.

Human Attributes — Rating Scale

A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
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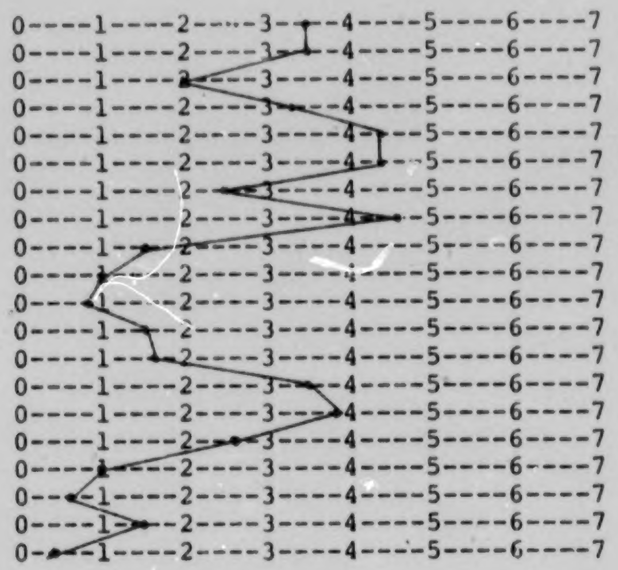
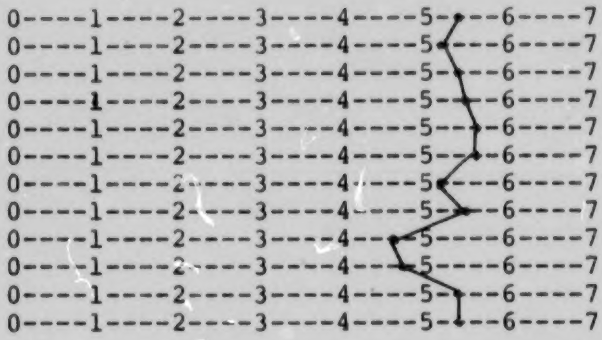


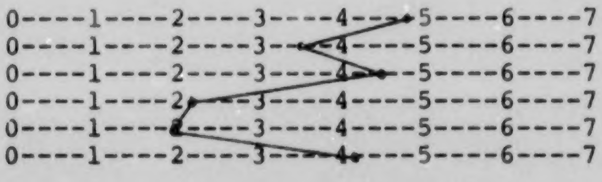
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



Profile of Human Attributes for Job Activities

Occupation: Automotive Mechanic

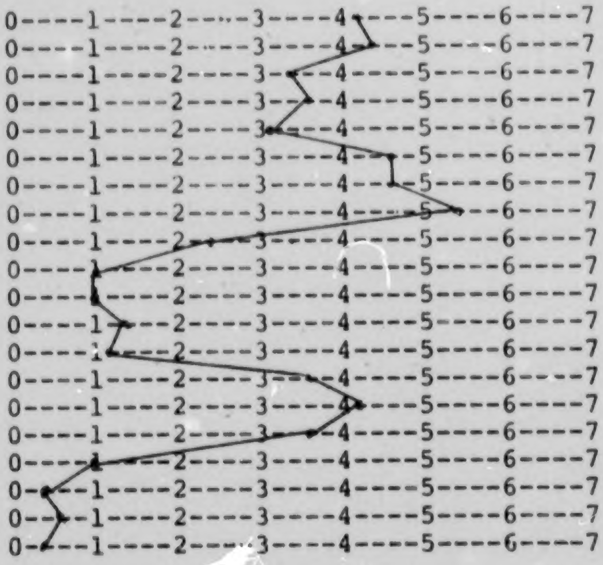
Job Activity:

Repair parts such as pistons, rods, gears, valves, and bearings using mechanic's handtools.

Human Attributes — **Rating Scale**

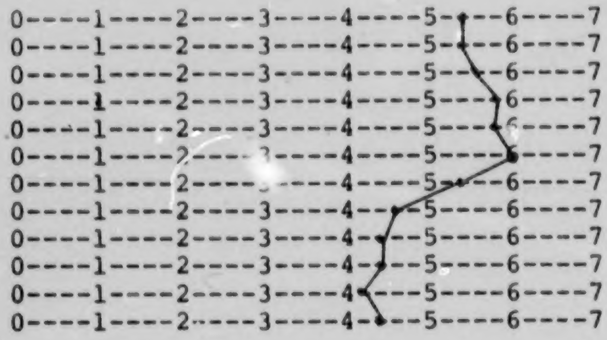
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



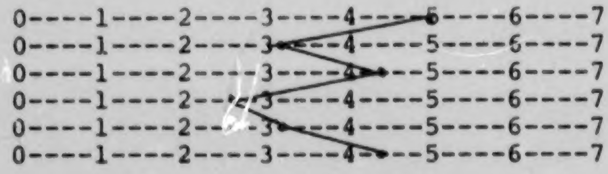
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



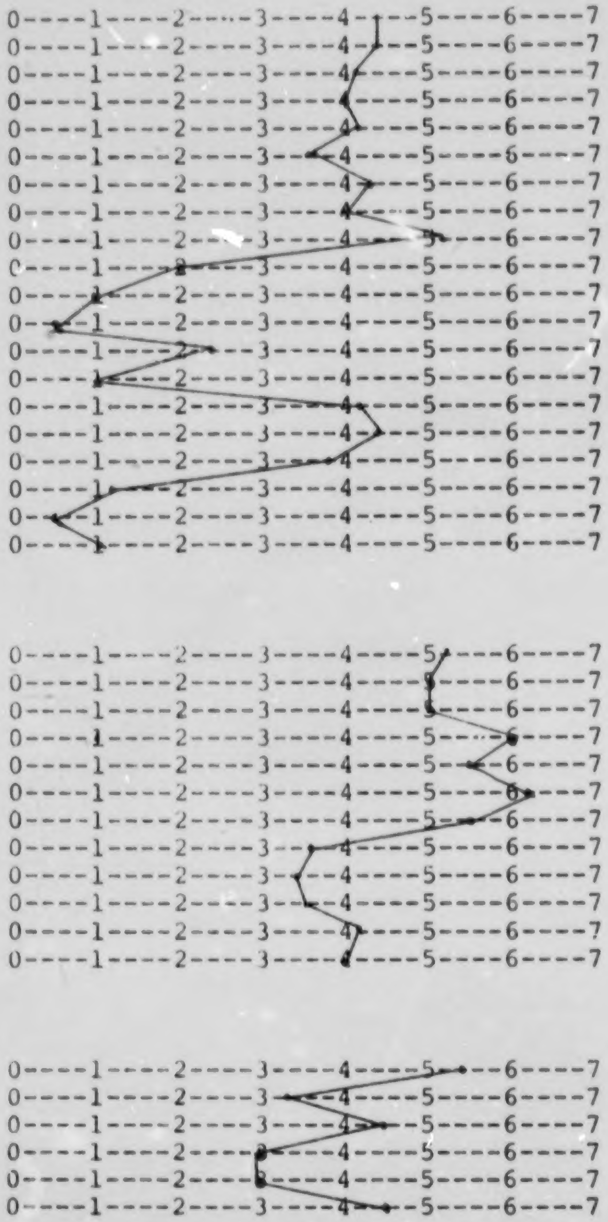
Profile of Human Attributes for Job Activities

Occupation: Automotive Mechanic

Job Activity:

Overhaul carburetors, blowers, generators, distributors, starters, and pumps.

Human Attributes Rating Scale



A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

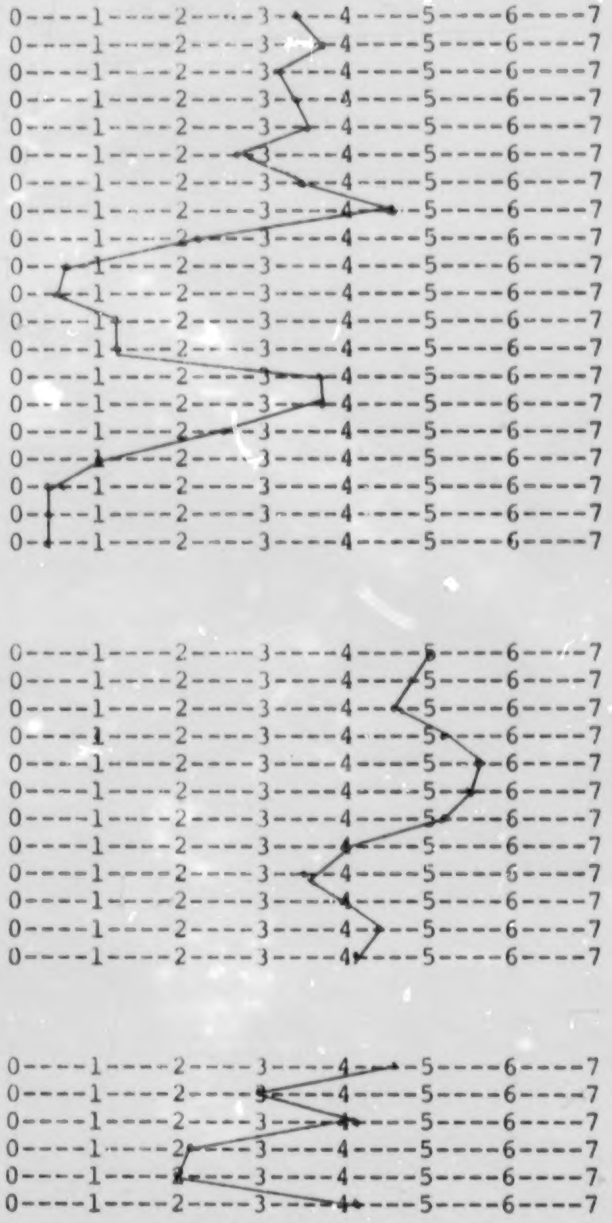
Profile of Human Attributes for Job Activities

Occupation: Automotive Mechanic

Job Activity:

Replace carburetors, blowers, generators, distributors, starters, and pumps.

Human Attributes	Rating Scale



A. Cognitive Attribute

1.	Closure	0----1----2----3----4----5----6----7
2.	Form Perception	0----1----2----3----4----5----6----7
3.	Perceptual Speed	0----1----2----3----4----5----6----7
4.	Spatial Scanning	0----1----2----3----4----5----6----7
5.	Spatial Orientation	0----1----2----3----4----5----6----7
6.	Visualization	0----1----2----3----4----5----6----7
7.	Number Facility	0----1----2----3----4----5----6----7
8.	Memory	0----1----2----3----4----5----6----7
9.	Verbal Comprehension	0----1----2----3----4----5----6----7
10.	Grammar	0----1----2----3----4----5----6----7
11.	Spelling	0----1----2----3----4----5----6----7
12.	Expressional Fluency	0----1----2----3----4----5----6----7
13.	Ideational Fluency	0----1----2----3----4----5----6----7
14.	Sensitivity to Problems	0----1----2----3----4----5----6----7
15.	Deductive Reasoning	0----1----2----3----4----5----6----7
16.	Inductive Reasoning	0----1----2----3----4----5----6----7
17.	Originality	0----1----2----3----4----5----6----7
18.	Social Intelligence	0----1----2----3----4----5----6----7
19.	Aesthetic Judgment	0----1----2----3----4----5----6----7
20.	Musical Aptitude	0----1----2----3----4----5----6----7

B. Psychomotor Attribute

21.	Control Precision	0----1----2----3----4----5----6----7
22.	Multilimb Coordination	0----1----2----3----4----5----6----7
23.	Reaction Time	0----1----2----3----4----5----6----7
24.	Eye-hand Coordination	0----1----2----3----4----5----6----7
25.	Manual Dexterity	0----1----2----3----4----5----6----7
26.	Finger Dexterity	0----1----2----3----4----5----6----7
27.	Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28.	Explosive Strength	0----1----2----3----4----5----6----7
29.	Static Strength	0----1----2----3----4----5----6----7
30.	Dynamic Strength	0----1----2----3----4----5----6----7
31.	Body Equilibrium	0----1----2----3----4----5----6----7
32.	Stamina	0----1----2----3----4----5----6----7

C. Sensory Capacity Attribute

33.	Near Visual Acuity	0----1----2----3----4----5----6----7
34.	Far Visual Acuity	0----1----2----3----4----5----6----7
35.	Depth Perception	0----1----2----3----4----5----6----7
36.	Color Discrimination	0----1----2----3----4----5----6----7
37.	Auditory Acuity	0----1----2----3----4----5----6----7
38.	Tactual Discrimination	0----1----2----3----4----5----6----7

Profile of Human Attributes for Job Activities

Occupation: Automotive Mechanic

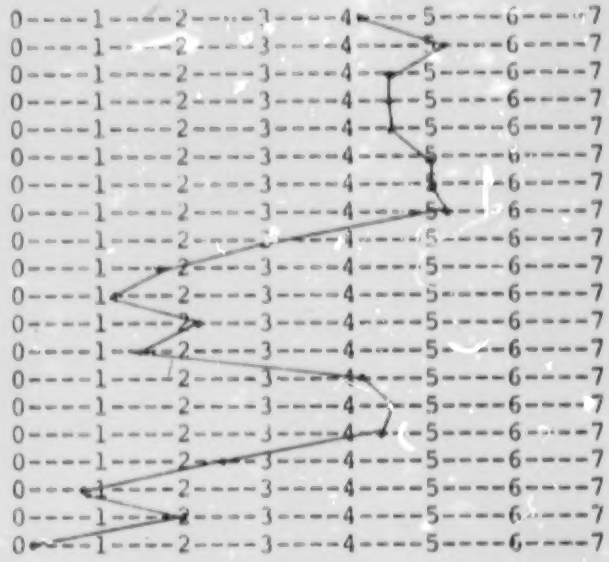
Job Activity:

Rebuild parts, such as crankshafts and cylinder blocks, using lathes, shapers, drill presses, and welding equipment.

Human Attributes — Rating Scale

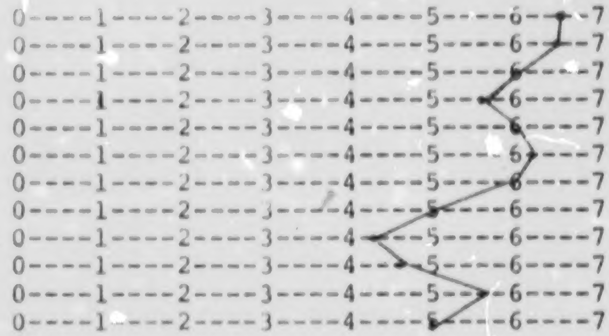
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



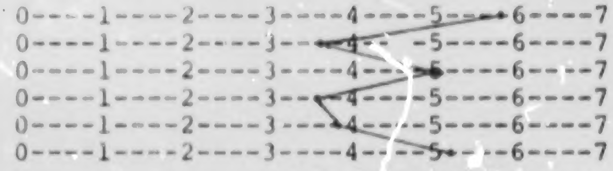
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



Profile of Human Attributes for Job Activities

Occupation: Automotive Mechanic

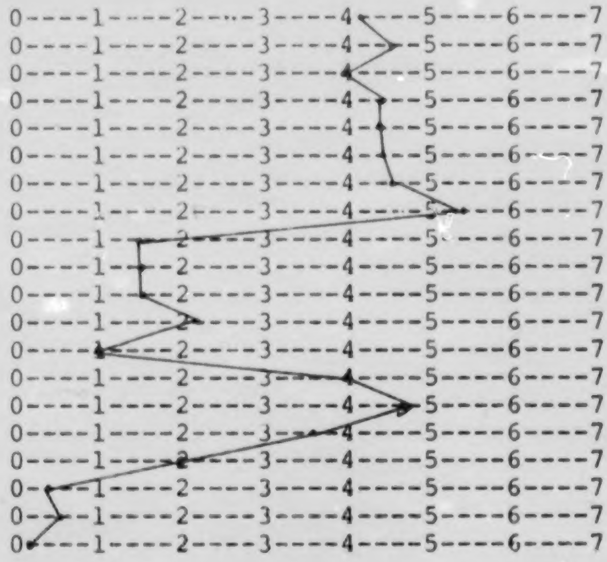
Job Activity:

Rewire ignition system, lights, and instrument panel.

Human Attributes — **Rating Scale**

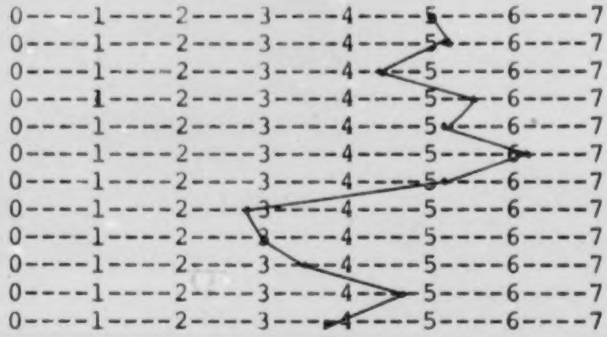
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



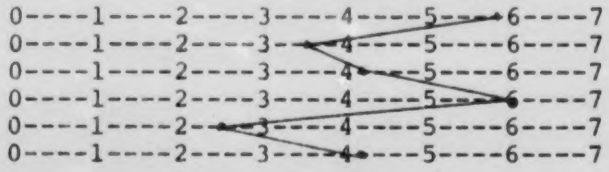
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



Profile of Human Attributes for Job Activities

Occupation: Automotive Mechanic

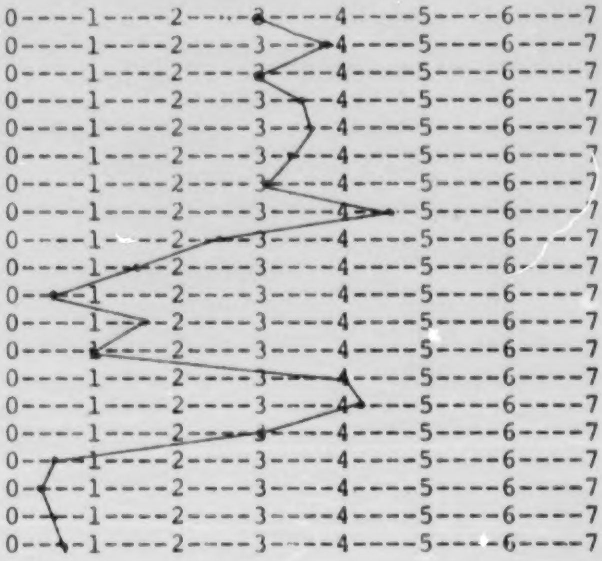
Job Activity:

Reline and adjust brakes.

Human Attributes	Rating Scale

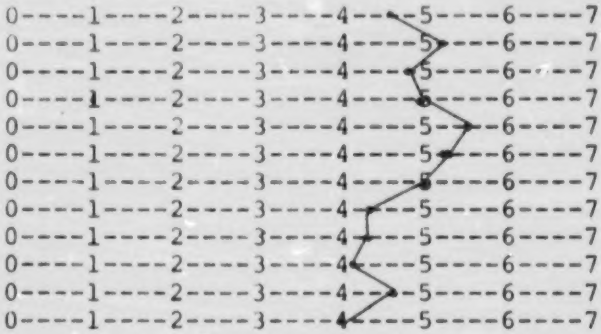
A. Cognitive Attribute

1.	Closure	0----1----2----3----4----5----6----7
2.	Form Perception	0----1----2----3----4----5----6----7
3.	Perceptual Speed	0----1----2----3----4----5----6----7
4.	Spatial Scanning	0----1----2----3----4----5----6----7
5.	Spatial Orientation	0----1----2----3----4----5----6----7
6.	Visualization	0----1----2----3----4----5----6----7
7.	Number Facility	0----1----2----3----4----5----6----7
8.	Memory	0----1----2----3----4----5----6----7
9.	Verbal Comprehension	0----1----2----3----4----5----6----7
10.	Grammar	0----1----2----3----4----5----6----7
11.	Spelling	0----1----2----3----4----5----6----7
12.	Expressional Fluency	0----1----2----3----4----5----6----7
13.	Ideational Fluency	0----1----2----3----4----5----6----7
14.	Sensitivity to Problems	0----1----2----3----4----5----6----7
15.	Deductive Reasoning	0----1----2----3----4----5----6----7
16.	Inductive Reasoning	0----1----2----3----4----5----6----7
17.	Originality	0----1----2----3----4----5----6----7
18.	Social Intelligence	0----1----2----3----4----5----6----7
19.	Aesthetic Judgment	0----1----2----3----4----5----6----7
20.	Musical Aptitude	0----1----2----3----4----5----6----7



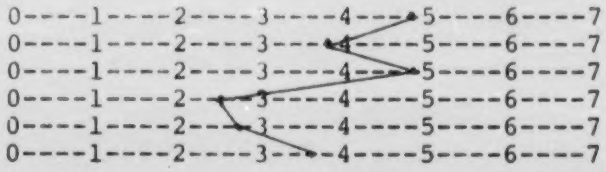
B. Psychomotor Attribute

21.	Control Precision	0----1----2----3----4----5----6----7
22.	Multilimb Coordination	0----1----2----3----4----5----6----7
23.	Reaction Time	0----1----2----3----4----5----6----7
24.	Eye-hand Coordination	0----1----2----3----4----5----6----7
25.	Manual Dexterity	0----1----2----3----4----5----6----7
26.	Finger Dexterity	0----1----2----3----4----5----6----7
27.	Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28.	Explosive Strength	0----1----2----3----4----5----6----7
29.	Static Strength	0----1----2----3----4----5----6----7
30.	Dynamic Strength	0----1----2----3----4----5----6----7
31.	Body Equilibrium	0----1----2----3----4----5----6----7
32.	Stamina	0----1----2----3----4----5----6----7



C. Sensory Capacity Attribute

33.	Near Visual Acuity	0----1----2----3----4----5----6----7
34.	Far Visual Acuity	0----1----2----3----4----5----6----7
35.	Depth Perception	0----1----2----3----4----5----6----7
36.	Color Discrimination	0----1----2----3----4----5----6----7
37.	Auditory Acuity	0----1----2----3----4----5----6----7
38.	Tactual Discrimination	0----1----2----3----4----5----6----7

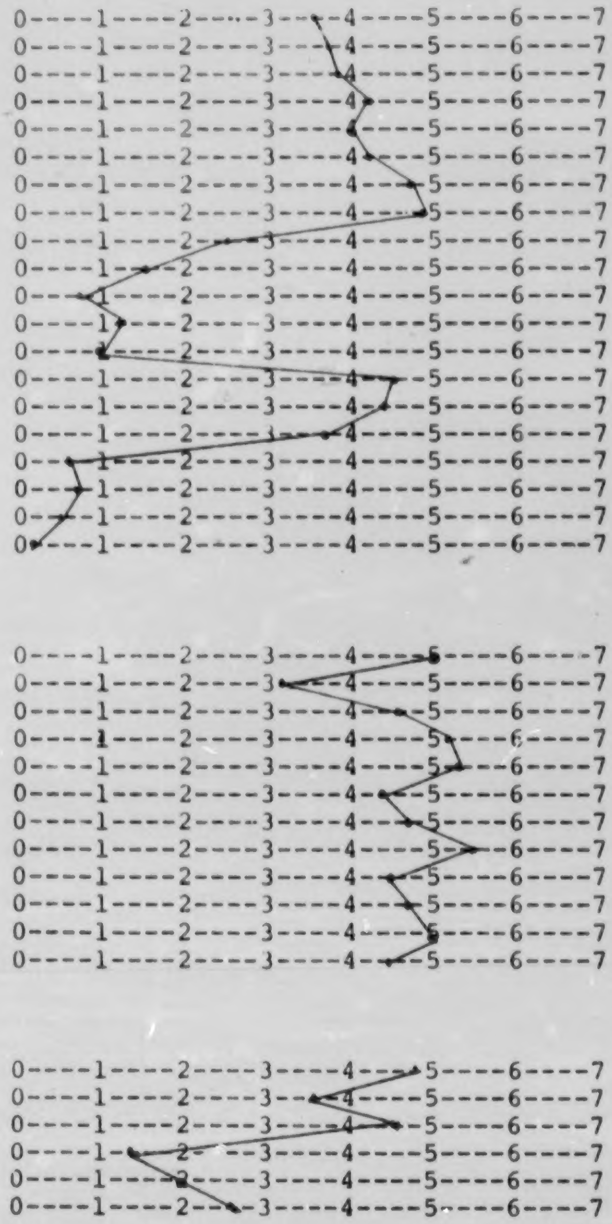


Profile of Human Attributes for Job Activities

Occupation: Automotive Mechanic

Job Activity:

Align front end.



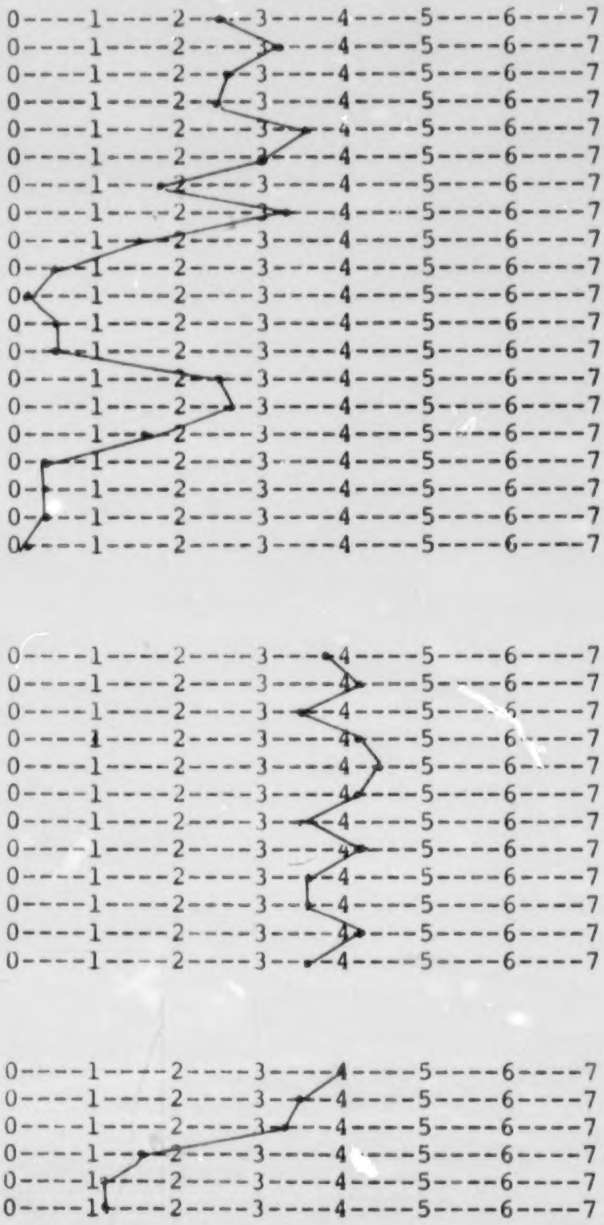
Human Attributes		Rating Scale
A. Cognitive Attribute		
1.	Closure	0----1----2----3----4----5----6----7
2.	Form Perception	0----1----2----3----4----5----6----7
3.	Perceptual Speed	0----1----2----3----4----5----6----7
4.	Spatial Scanning	0----1----2----3----4----5----6----7
5.	Spatial Orientation	0----1----2----3----4----5----6----7
6.	Visualization	0----1----2----3----4----5----6----7
7.	Number Facility	0----1----2----3----4----5----6----7
8.	Memory	0----1----2----3----4----5----6----7
9.	Verbal Comprehension	0----1----2----3----4----5----6----7
10.	Grammar	0----1----2----3----4----5----6----7
11.	Spelling	0----1----2----3----4----5----6----7
12.	Expressional Fluency	0----1----2----3----4----5----6----7
13.	Ideational Fluency	0----1----2----3----4----5----6----7
14.	Sensitivity to Problems	0----1----2----3----4----5----6----7
15.	Deductive Reasoning	0----1----2----3----4----5----6----7
16.	Inductive Reasoning	0----1----2----3----4----5----6----7
17.	Originality	0----1----2----3----4----5----6----7
18.	Social Intelligence	0----1----2----3----4----5----6----7
19.	Aesthetic Judgment	0----1----2----3----4----5----6----7
20.	Musical Aptitude	0----1----2----3----4----5----6----7
B. Psychomotor Attribute		
21.	Control Precision	0----1----2----3----4----5----6----7
22.	Multilimb Coordination	0----1----2----3----4----5----6----7
23.	Reaction Time	0----1----2----3----4----5----6----7
24.	Eye-hand Coordination	0----1----2----3----4----5----6----7
25.	Manual Dexterity	0----1----2----3----4----5----6----7
26.	Finger Dexterity	0----1----2----3----4----5----6----7
27.	Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28.	Explosive Strength	0----1----2----3----4----5----6----7
29.	Static Strength	0----1----2----3----4----5----6----7
30.	Dynamic Strength	0----1----2----3----4----5----6----7
31.	Body Equilibrium	0----1----2----3----4----5----6----7
32.	Stamina	0----1----2----3----4----5----6----7
C. Sensory Capacity Attribute		
33.	Near Visual Acuity	0----1----2----3----4----5----6----7
34.	Far Visual Acuity	0----1----2----3----4----5----6----7
35.	Depth Perception	0----1----2----3----4----5----6----7
36.	Color Discrimination	0----1----2----3----4----5----6----7
37.	Auditory Acuity	0----1----2----3----4----5----6----7
38.	Tactual Discrimination	0----1----2----3----4----5----6----7

Profile of Human Attributes for Job Activities

Occupation: Automotive Mechanic

Job Activity:

Repair or replace shock absorbers.



Human Attributes	Rating Scale
A. Cognitive Attribute	
1. Closure	0----1----2----3----4----5----6----7
2. Form Perception	0----1----2----3----4----5----6----7
3. Perceptual Speed	0----1----2----3----4----5----6----7
4. Spatial Scanning	0----1----2----3----4----5----6----7
5. Spatial Orientation	0----1----2----3----4----5----6----7
6. Visualization	0----1----2----3----4----5----6----7
7. Number Facility	0----1----2----3----4----5----6----7
8. Memory	0----1----2----3----4----5----6----7
9. Verbal Comprehension	0----1----2----3----4----5----6----7
10. Grammar	0----1----2----3----4----5----6----7
11. Spelling	0----1----2----3----4----5----6----7
12. Expressional Fluency	0----1----2----3----4----5----6----7
13. Ideational Fluency	0----1----2----3----4----5----6----7
14. Sensitivity to Problems	0----1----2----3----4----5----6----7
15. Deductive Reasoning	0----1----2----3----4----5----6----7
16. Inductive Reasoning	0----1----2----3----4----5----6----7
17. Originality	0----1----2----3----4----5----6----7
18. Social Intelligence	0----1----2----3----4----5----6----7
19. Aesthetic Judgment	0----1----2----3----4----5----6----7
20. Musical Aptitude	0----1----2----3----4----5----6----7
B. Psychomotor Attribute	
21. Control Precision	0----1----2----3----4----5----6----7
22. Multilimb Coordination	0----1----2----3----4----5----6----7
23. Reaction Time	0----1----2----3----4----5----6----7
24. Eye-hand Coordination	0----1----2----3----4----5----6----7
25. Manual Dexterity	0----1----2----3----4----5----6----7
26. Finger Dexterity	0----1----2----3----4----5----6----7
27. Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28. Explosive Strength	0----1----2----3----4----5----6----7
29. Static Strength	0----1----2----3----4----5----6----7
30. Dynamic Strength	0----1----2----3----4----5----6----7
31. Body Equilibrium	0----1----2----3----4----5----6----7
32. Stamina	0----1----2----3----4----5----6----7
C. Sensory Capacity Attribute	
33. Near Visual Acuity	0----1----2----3----4----5----6----7
34. Far Visual Acuity	0----1----2----3----4----5----6----7
35. Depth Perception	0----1----2----3----4----5----6----7
36. Color Discrimination	0----1----2----3----4----5----6----7
37. Auditory Acuity	0----1----2----3----4----5----6----7
38. Tactual Discrimination	0----1----2----3----4----5----6----7

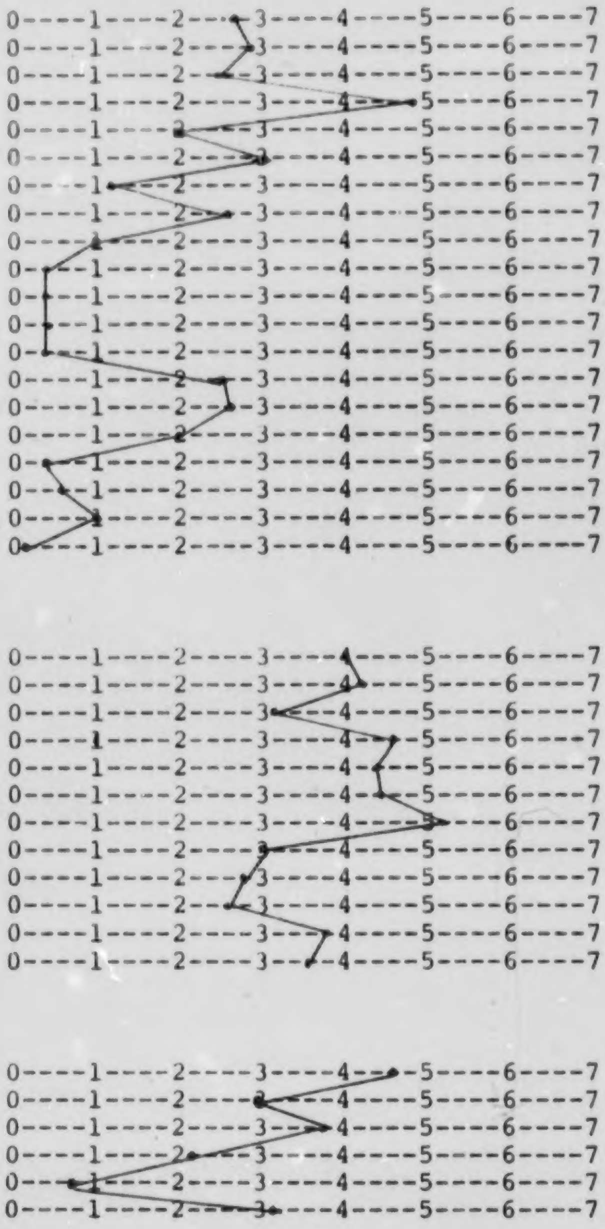
Profile of Human Attributes for Job Activities

Occupation: Automotive Mechanic

Job Activity:

Solder leaks in radiator.

Human Attributes — **Rating Scale**



A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

Profile of Human Attributes for Job Activities

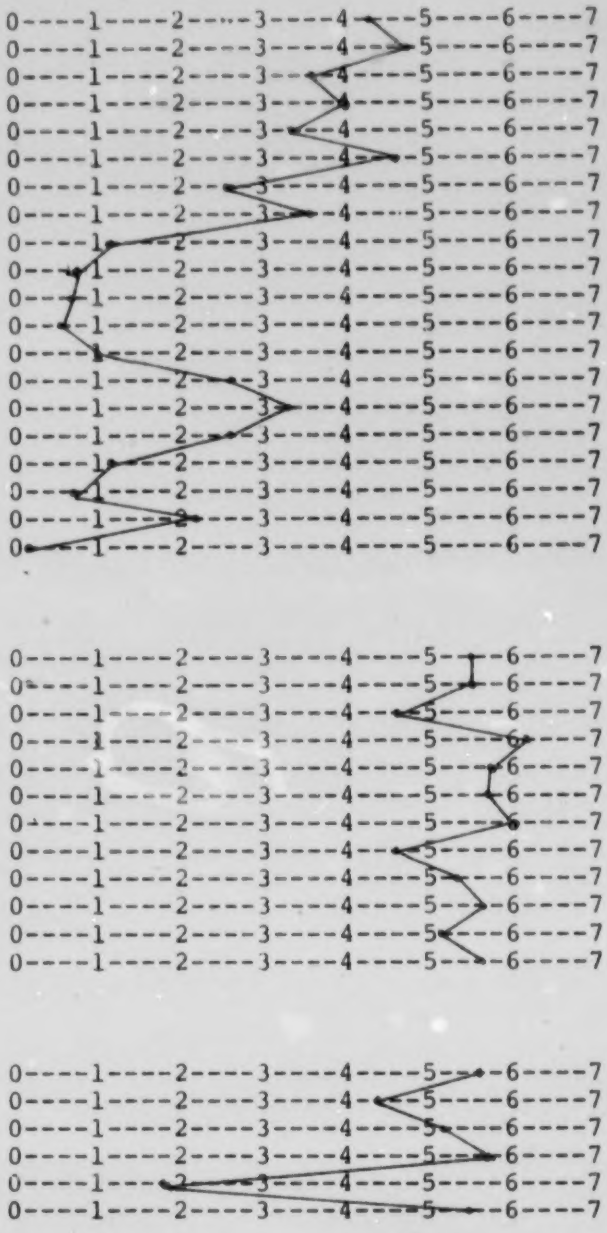
Occupation: Automotive Mechanic

Job Activity:

Mend damaged body and fenders by hammering out or filling in dents and welding broken parts.

7a

Human Attributes — **Rating Scale**



A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

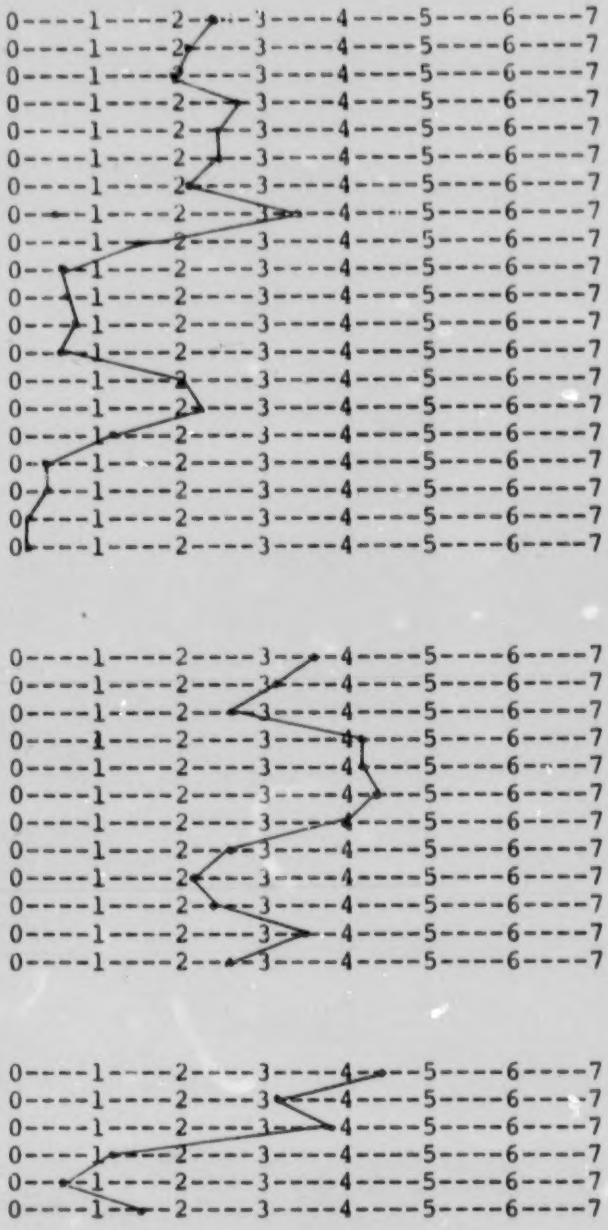
Profile of Human Attributes for Job Activities

Occupation: Automotive Mechanic

Job Activity:

Replace and adjust headlights.

Human Attributas — Rating Scale



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C. Sensory Capacity Attribute

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34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

Profile of Human Attributes for Job Activities

Occupation: Automotive Mechanic

Job Activity:

Install accessories, such as radios, heaters, mirrors, and windshield wipers.

Human Attributes — **Rating Scale**

A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
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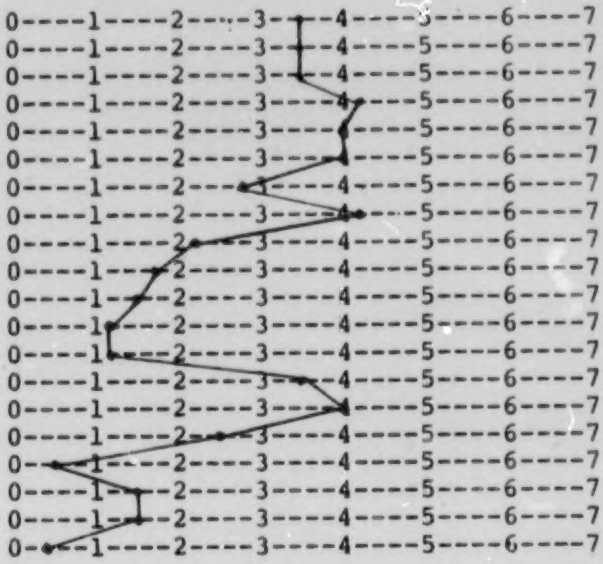

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
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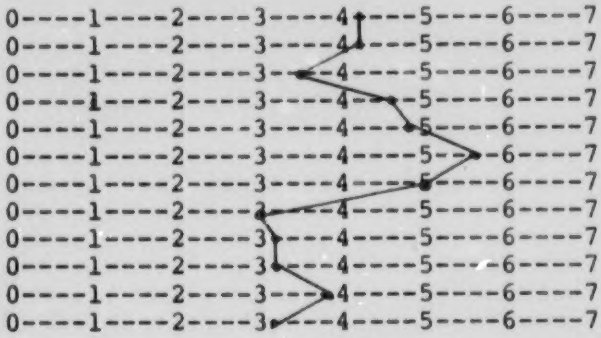
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

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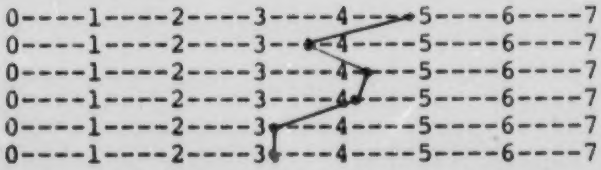


Profile of Human Attributes for Job Activities

Occupation: Business Data Programmer

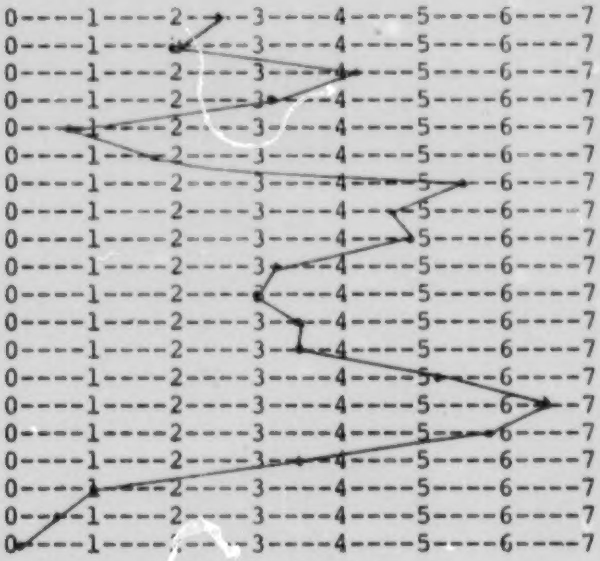
Job Activity:

Analyze all or part of workflow chart or diagram representing buisness problem by applying knowledge of computer capabilities, subject matter, algebra, and symbolic logic to develop sequence of program steps.

Human Attributes Rating Scale

A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
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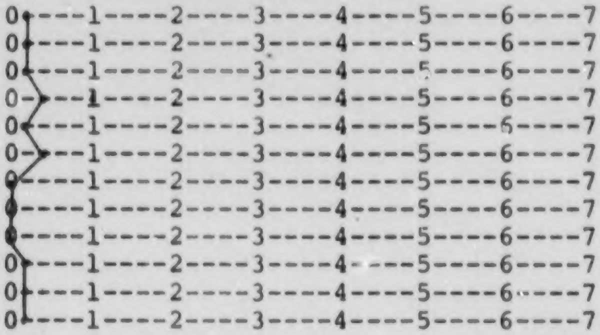

C. Sensory Capacity Attribute

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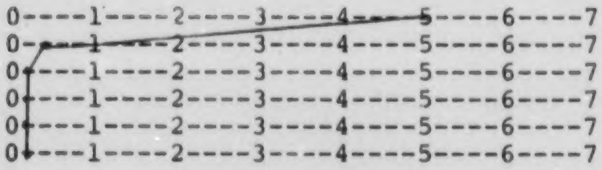
38. Tactual Discrimination

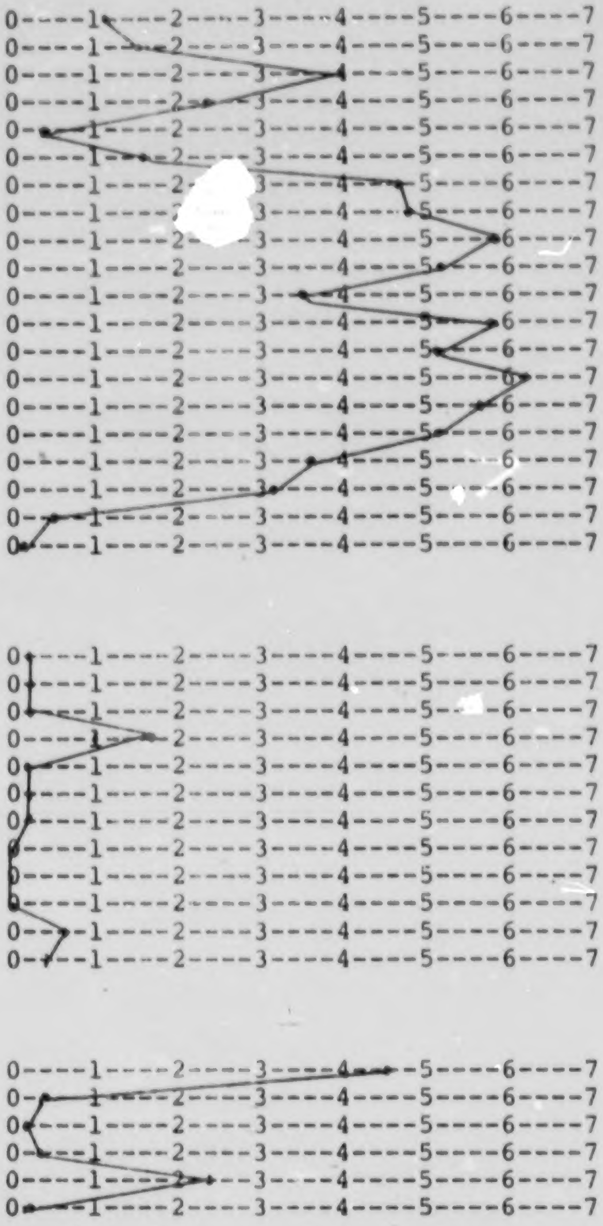


Profile of Human Attributes for Job Activities

Occupation: Business Data Programmer

Job Activity: Confer with superviosr and representatives of departments affected by program to resolve questions of program intent, output requirements, input data acquisition, extent of automatic programing and coding use and modification, and inclusion of internal checks and controls.

Human Attributes — Rating Scale



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C. Sensory Capacity Attribute

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34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

Profile of Human Attributes for Job Activities

Occupation: Business Data Programmer

Job Activity:

Write detailed logical flow chart in symbolic form to represent work order of data to be processed by computer system, and to describe input, output, and arithmetic and logical operations involved.

Human Attributes — Rating Scale

A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
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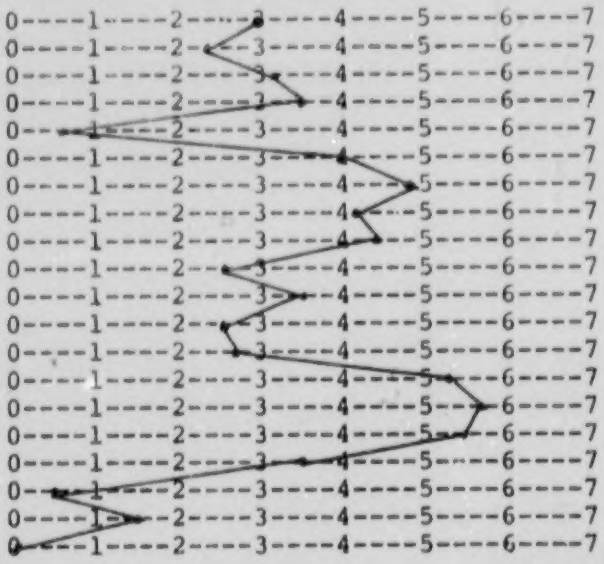

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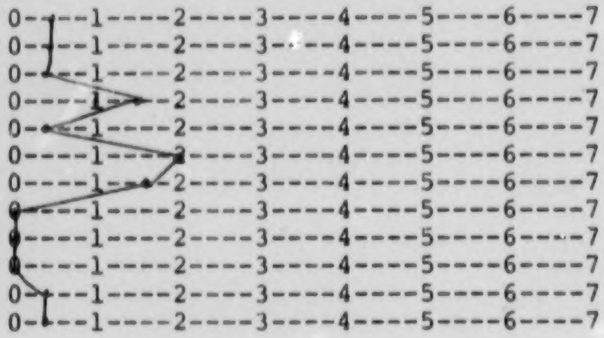

C. Sensory Capacity Attribute

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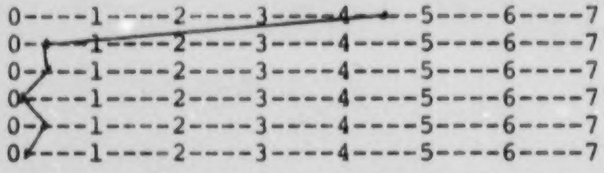

Profile of Human Attributes for Job Activities

Occupation: Business Data Programmer

Job Activity:

Convert detailed logical flow chart to language processable by computer.

Human Attributes Rating Scale

A. Cognitive Attribute

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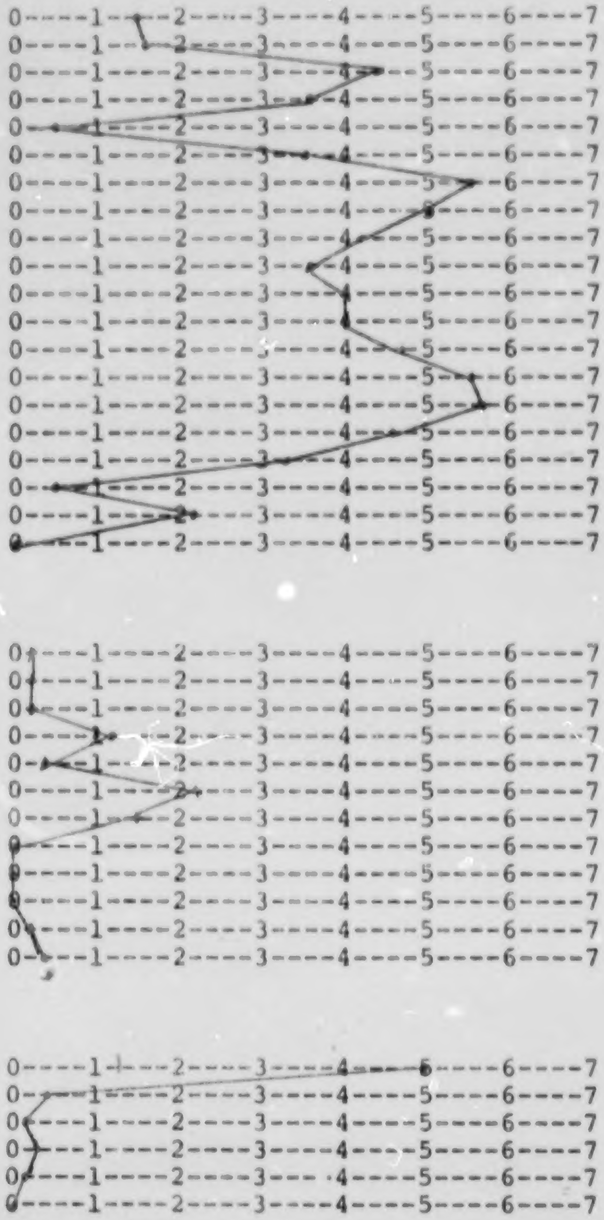

Profile of Human Attributes for Job Activities

Occupation: Business Data Programmer

Job Activity:

Devise sample input data to provide test of program adequacy.

Human Attributes — **Rating Scale**

A. Cognitive Attribute

1. Closure
2. Form Perception
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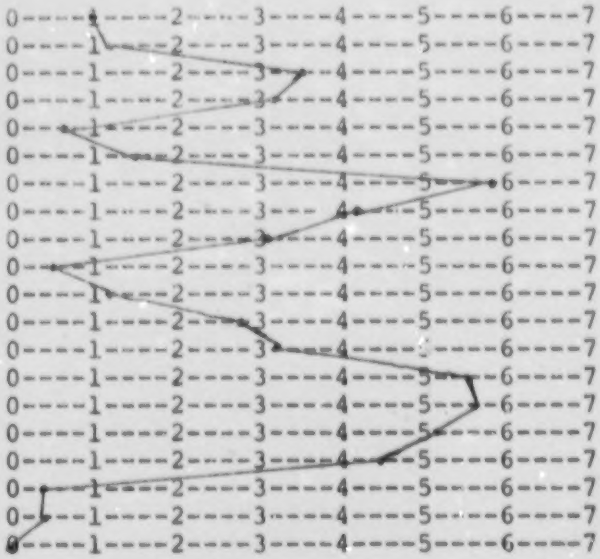

B. Psychomotor Attribute

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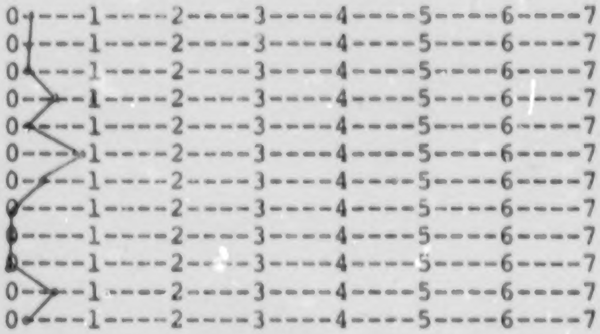

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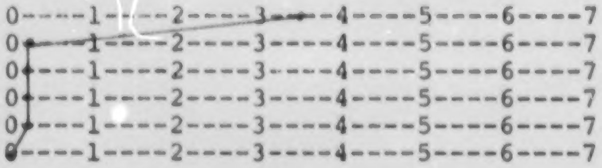

Profile of Human Attributes for Job Activities

Occupation: Business Data Programmer

Job Activity:

Prepare block diagrams to specify equipment configuration.

Human Attributes — **Rating Scale**

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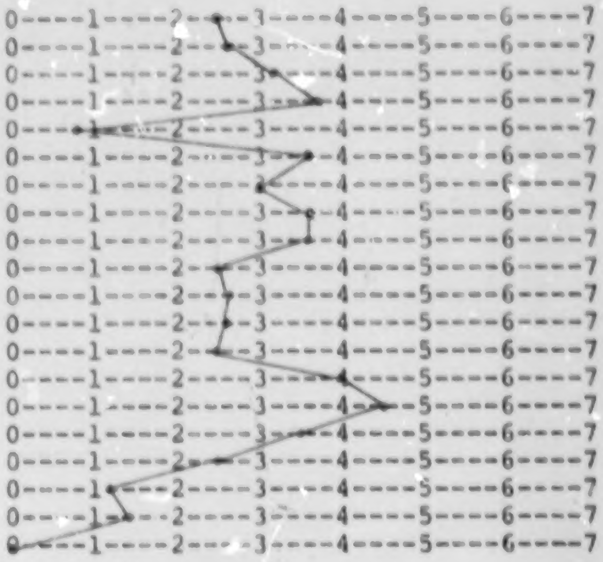

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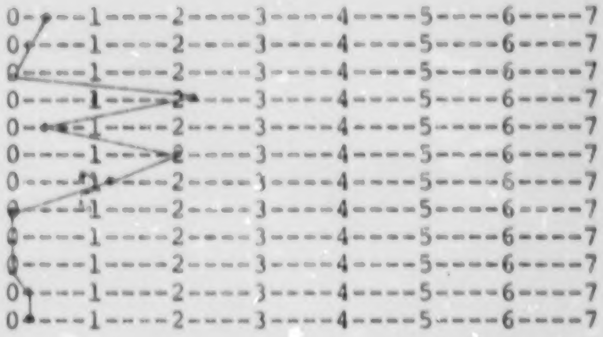

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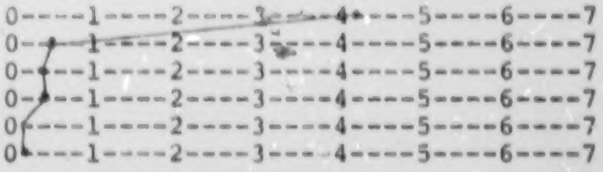

Profile of Human Attributes for Job Activities

Occupation: Business Data Programmer

Job Activity:

Observe or run tests of coded program on computer, using actual or sample input data.

Human Attributes — Rating Scale

A. Cognitive Attribute

1. Closure
2. Form Perception
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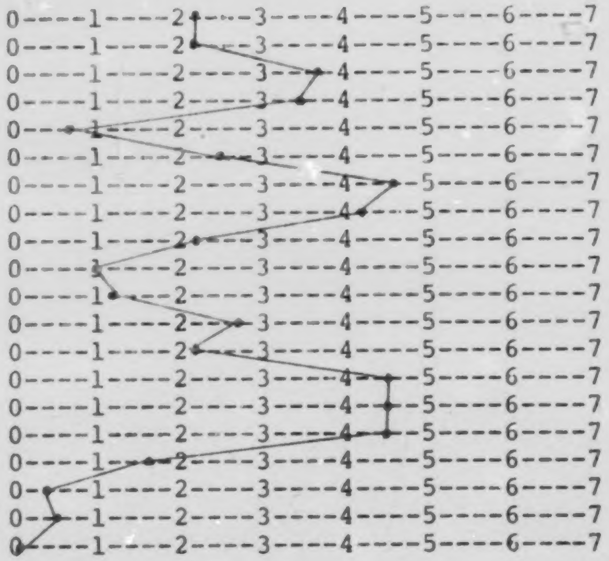

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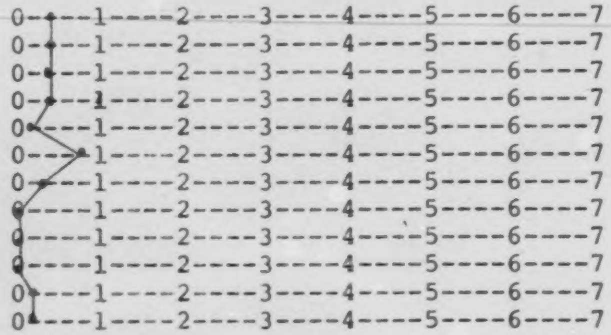

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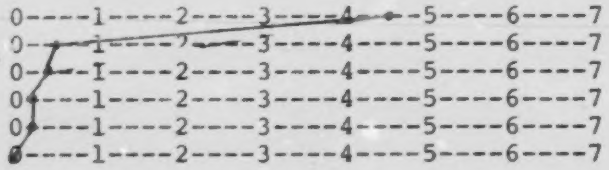


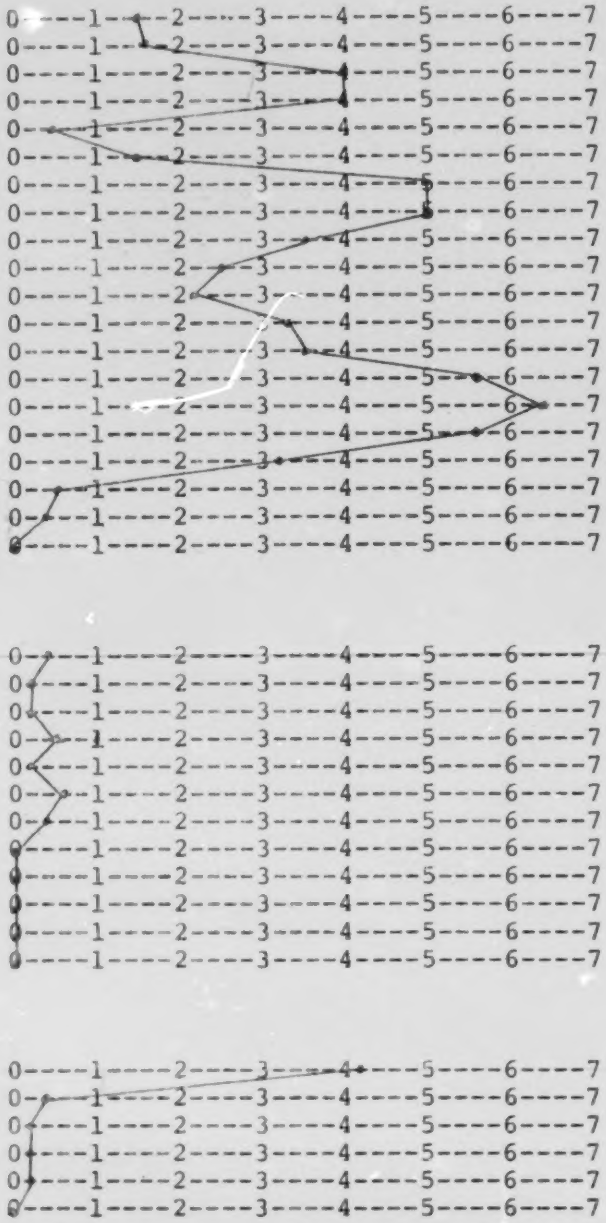
Profile of Human Attributes for Job Activities

Occupation: Business Data Programmer

Job Activity:

Correct program errors by such methods as altering program steps and sequence.

Human Attributes — Rating Scale



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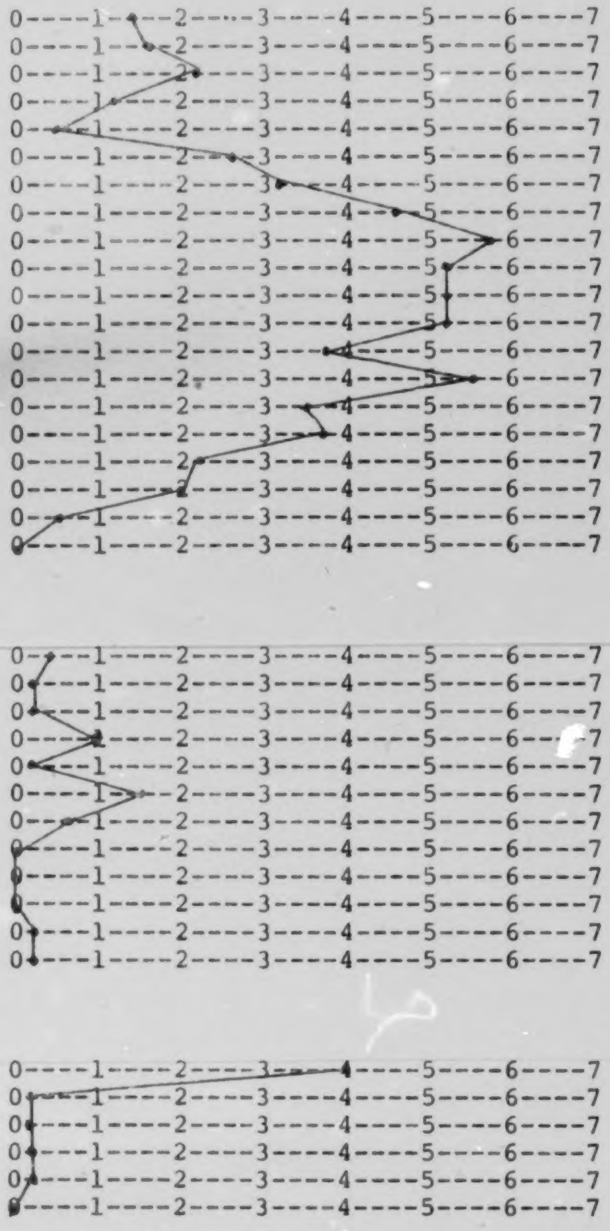
Profile of Human Attributes for Job Activities

Occupation: Business Data Programmer

Job Activity:

Prepare written instructions (run book) to guide operating personnel during production runs.

Human Attributes	Rating Scale



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Profile of Human Attributes for Job Activities

Occupation: Business Data Programmer

Job Activity:

Analyze, review, and rewrite programs to increase operating efficiency or adapt to new requirements.

Human Attributes — **Rating Scale**

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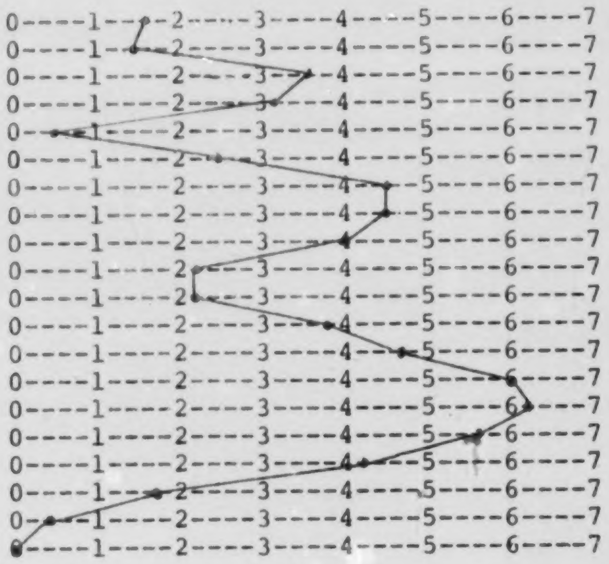

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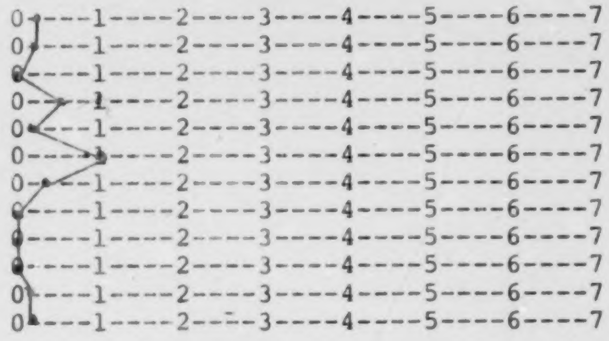

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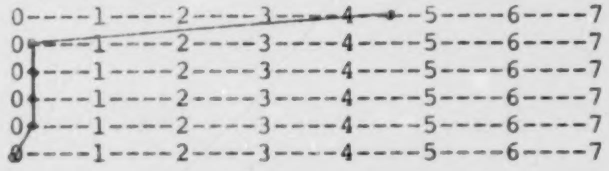


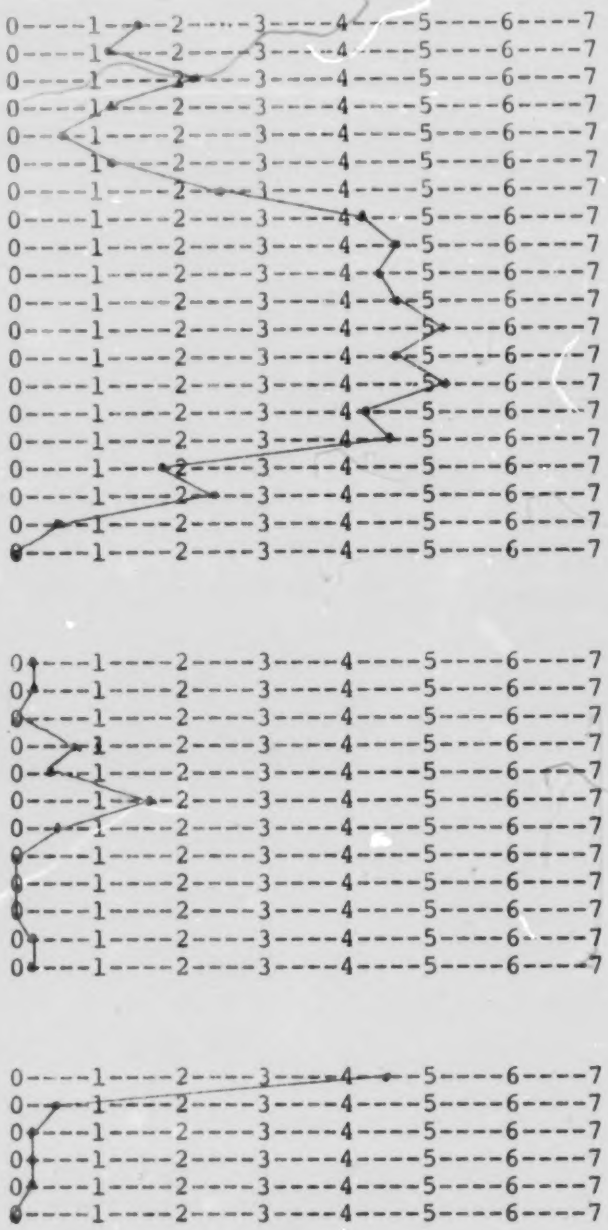
Profile of Human Attributes for Job Activities

Occupation: Business Data Programmer

Job Activity:

Compile documentation of program development and subsequent revisions.

Human Attributes — **Rating Scale**



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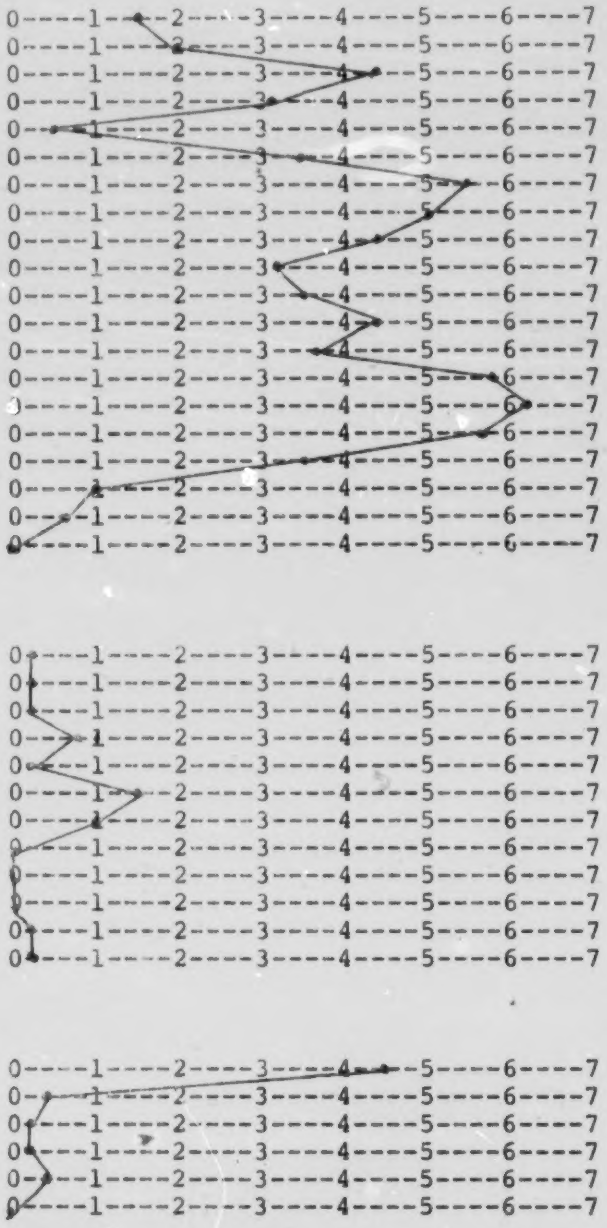
Profile of Human Attributes for Job Activities

Occupation: Business Data Programmer

Job Activity:

Write program for one make and type of computer.

Human Attributes	Rating Scale
A. Cognitive Attribute	
1. Closure	0----1----2----3----4----5----6----7
2. Form Perception	0----1----2----3----4----5----6----7
3. Perceptual Speed	0----1----2----3----4----5----6----7
4. Spatial Scanning	0----1----2----3----4----5----6----7
5. Spatial Orientation	0----1----2----3----4----5----6----7
6. Visualization	0----1----2----3----4----5----6----7
7. Number Facility	0----1----2----3----4----5----6----7
8. Memory	0----1----2----3----4----5----6----7
9. Verbal Comprehension	0----1----2----3----4----5----6----7
10. Grammar	0----1----2----3----4----5----6----7
11. Spelling	0----1----2----3----4----5----6----7
12. Expressional Fluency	0----1----2----3----4----5----6----7
13. Ideational Fluency	0----1----2----3----4----5----6----7
14. Sensitivity to Problems	0----1----2----3----4----5----6----7
15. Deductive Reasoning	0----1----2----3----4----5----6----7
16. Inductive Reasoning	0----1----2----3----4----5----6----7
17. Originality	0----1----2----3----4----5----6----7
18. Social Intelligence	0----1----2----3----4----5----6----7
19. Aesthetic Judgment	0----1----2----3----4----5----6----7
20. Musical Aptitude	0----1----2----3----4----5----6----7
B. Psychomotor Attribute	
21. Control Precision	0----1----2----3----4----5----6----7
22. Multilimb Coordination	0----1----2----3----4----5----6----7
23. Reaction Time	0----1----2----3----4----5----6----7
24. Eye-hand Coordination	0----1----2----3----4----5----6----7
25. Manual Dexterity	0----1----2----3----4----5----6----7
26. Finger Dexterity	0----1----2----3----4----5----6----7
27. Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28. Explosive Strength	0----1----2----3----4----5----6----7
29. Static Strength	0----1----2----3----4----5----6----7
30. Dynamic Strength	0----1----2----3----4----5----6----7
31. Body Equilibrium	0----1----2----3----4----5----6----7
32. Stamina	0----1----2----3----4----5----6----7
C. Sensory Capacity Attribute	
33. Near Visual Acuity	0----1----2----3----4----5----6----7
34. Far Visual Acuity	0----1----2----3----4----5----6----7
35. Depth Perception	0----1----2----3----4----5----6----7
36. Color Discrimination	0----1----2----3----4----5----6----7
37. Auditory Acuity	0----1----2----3----4----5----6----7
38. Tactual Discrimination	0----1----2----3----4----5----6----7



APPENDIX Y

PROFILES OF HANDICAPPED INDIVIDUALS

MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Deaf

Human Attributes — Rating Scale

A. Cognitive Attribute

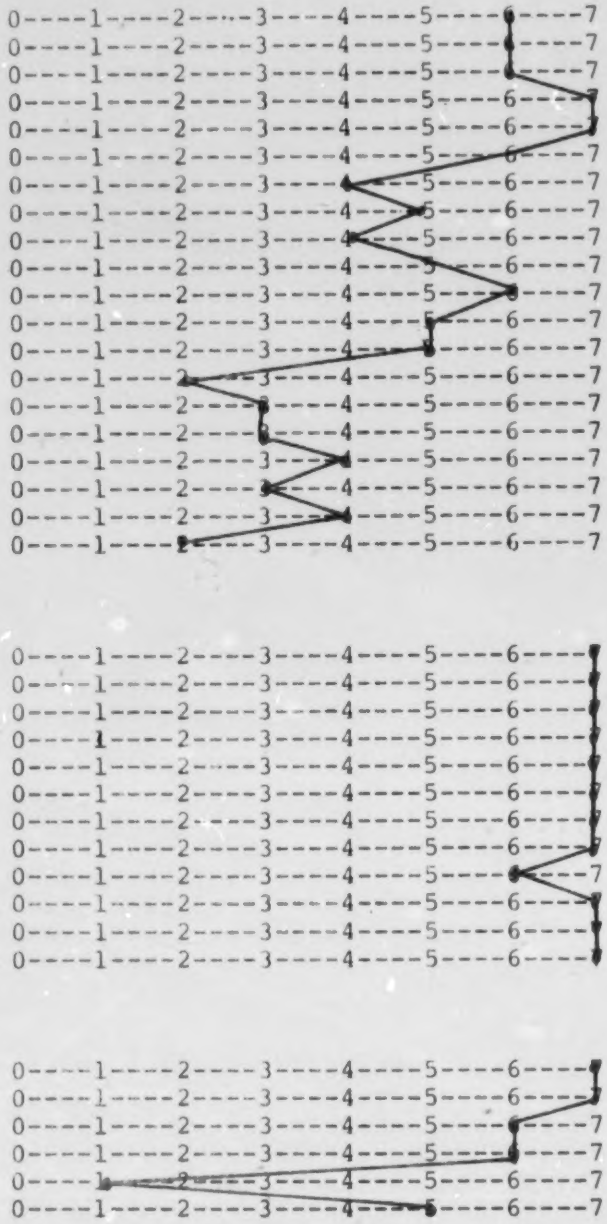
1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

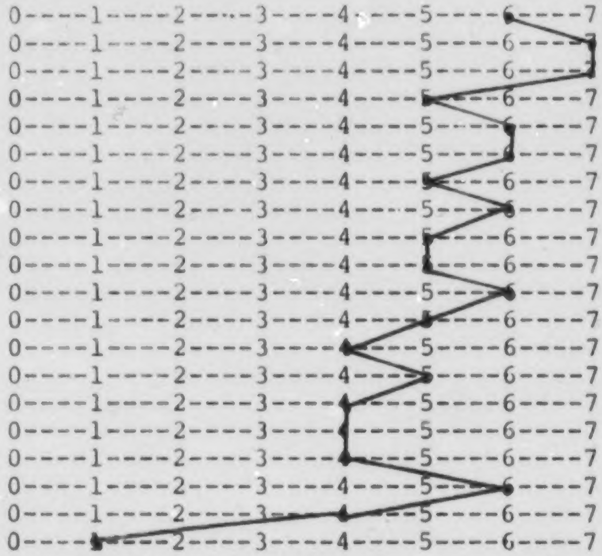
INDIVIDUAL RESPONDENT

Handicapping Condition: Deaf

Human Attributes — Rating Scale

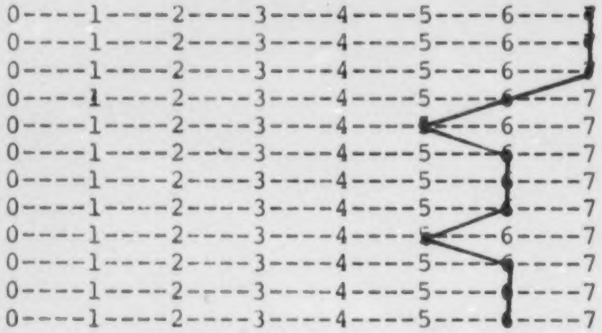
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



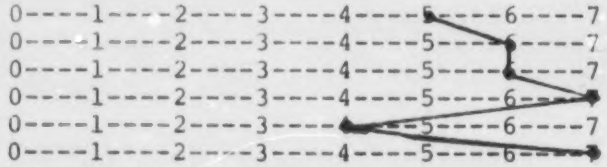
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

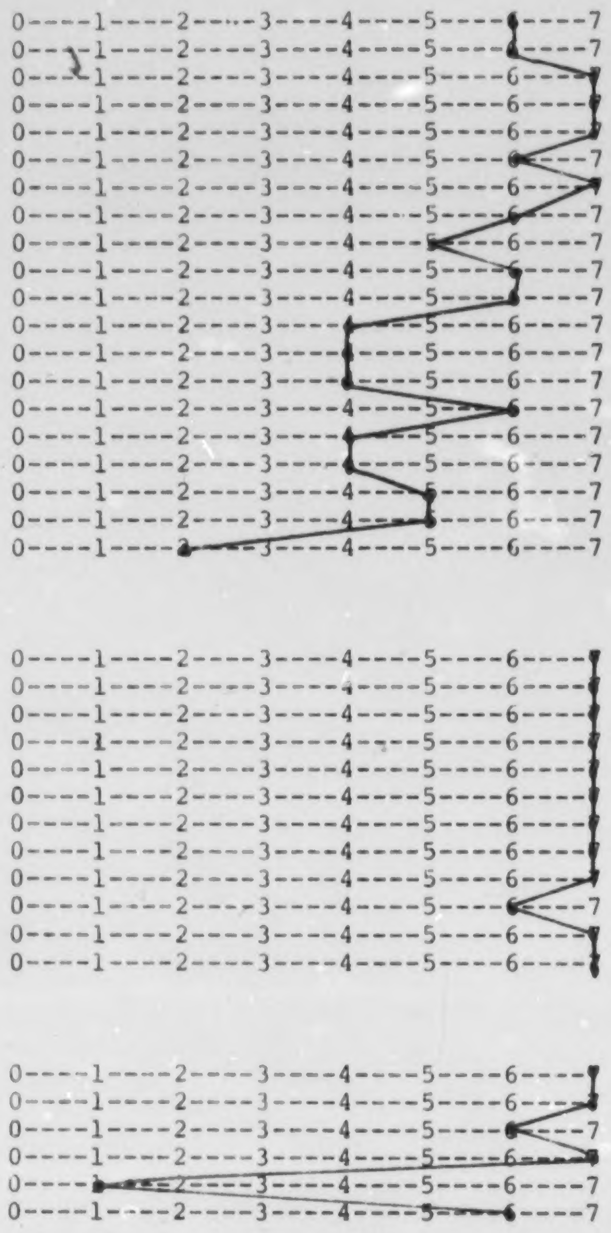


MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Deaf

Human Attributes — Rating Scale



A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Deaf

Human Attributes — Rating Scale

A. Cognitive Attribute

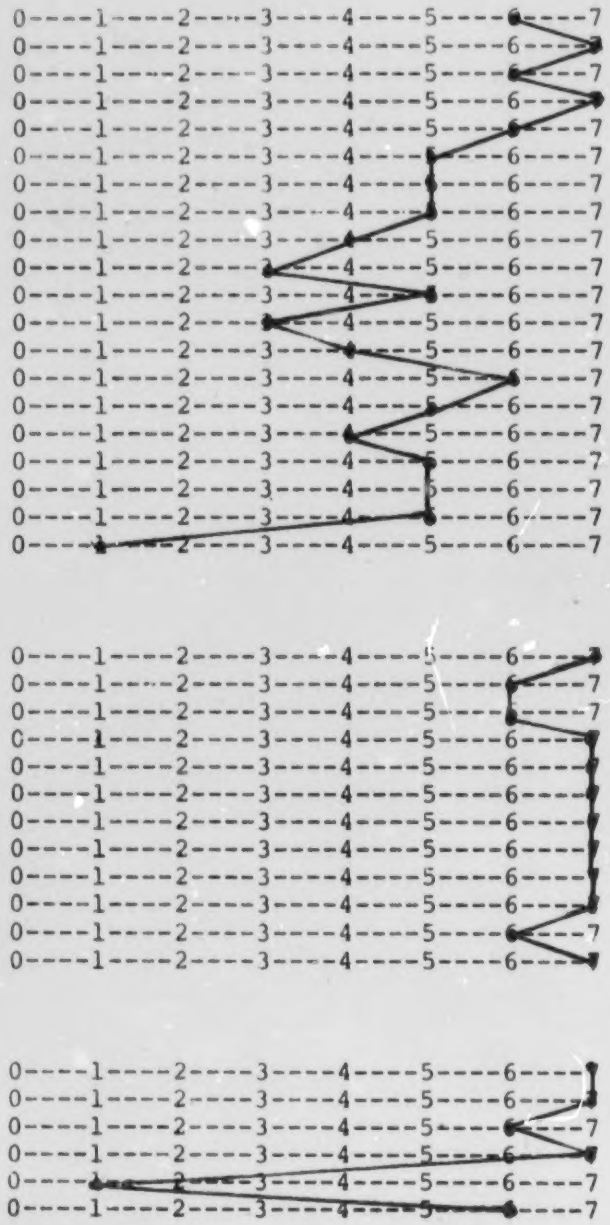
1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

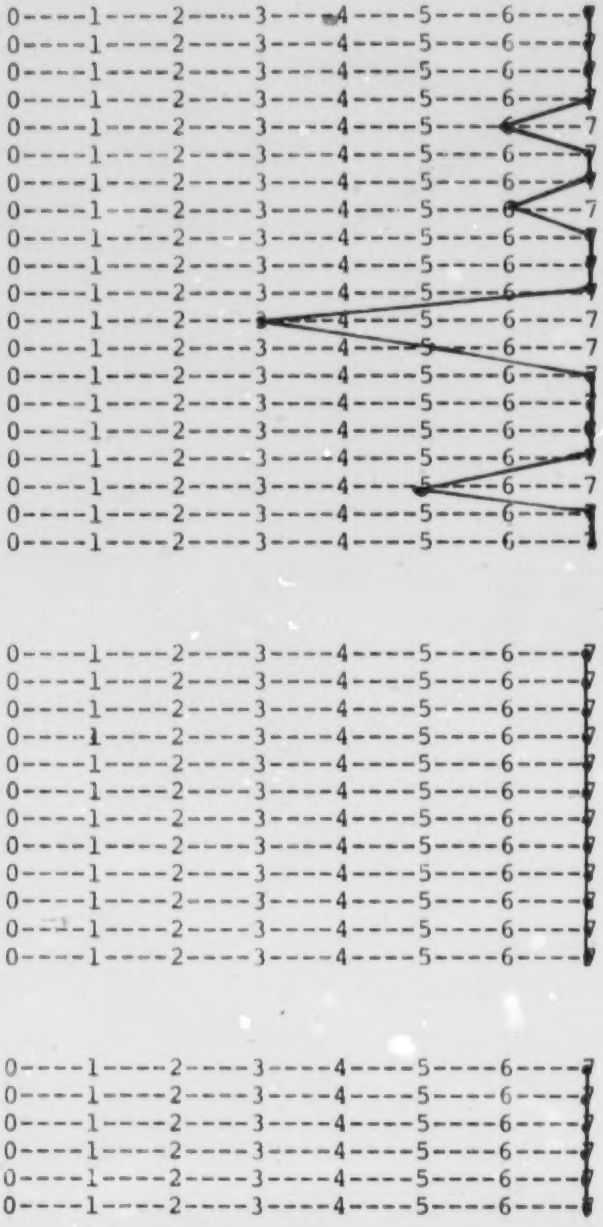


Y-4

MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Speech Impairment

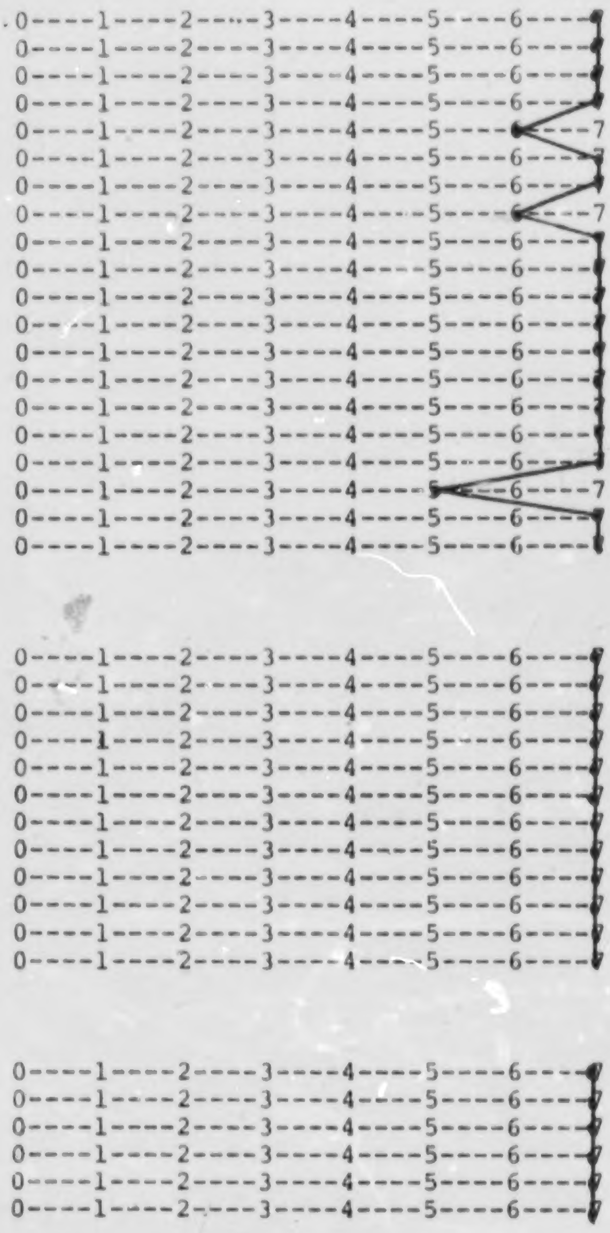


Human Attributes		Rating Scale
A. Cognitive Attribute		
1.	Closure	0----1----2----3----4----5----6----7
2.	Form Perception	0----1----2----3----4----5----6----7
3.	Perceptual Speed	0----1----2----3----4----5----6----7
4.	Spatial Scanning	0----1----2----3----4----5----6----7
5.	Spatial Orientation	0----1----2----3----4----5----6----7
6.	Visualization	0----1----2----3----4----5----6----7
7.	Number Facility	0----1----2----3----4----5----6----7
8.	Memory	0----1----2----3----4----5----6----7
9.	Verbal Comprehension	0----1----2----3----4----5----6----7
10.	Grammar	0----1----2----3----4----5----6----7
11.	Spelling	0----1----2----3----4----5----6----7
12.	Expressional Fluency	0----1----2----3----4----5----6----7
13.	Ideational Fluency	0----1----2----3----4----5----6----7
14.	Sensitivity to Problems	0----1----2----3----4----5----6----7
15.	Deductive Reasoning	0----1----2----3----4----5----6----7
16.	Inductive Reasoning	0----1----2----3----4----5----6----7
17.	Originality	0----1----2----3----4----5----6----7
18.	Social Intelligence	0----1----2----3----4----5----6----7
19.	Aesthetic Judgment	0----1----2----3----4----5----6----7
20.	Musical Aptitude	0----1----2----3----4----5----6----7
B. Psychomotor Attribute		
21.	Control Precision	0----1----2----3----4----5----6----7
22.	Multilimb Coordination	0----1----2----3----4----5----6----7
23.	Reaction Time	0----1----2----3----4----5----6----7
24.	Eye-hand Coordination	0----1----2----3----4----5----6----7
25.	Manual Dexterity	0----1----2----3----4----5----6----7
26.	Finger Dexterity	0----1----2----3----4----5----6----7
27.	Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28.	Explosive Strength	0----1----2----3----4----5----6----7
29.	Static Strength	0----1----2----3----4----5----6----7
30.	Dynamic Strength	0----1----2----3----4----5----6----7
31.	Body Equilibrium	0----1----2----3----4----5----6----7
32.	Stamina	0----1----2----3----4----5----6----7
C. Sensory Capacity Attribute		
33.	Near Visual Acuity	0----1----2----3----4----5----6----7
34.	Far Visual Acuity	0----1----2----3----4----5----6----7
35.	Depth Perception	0----1----2----3----4----5----6----7
36.	Color Discrimination	0----1----2----3----4----5----6----7
37.	Auditory Acuity	0----1----2----3----4----5----6----7
38.	Tactual Discrimination	0----1----2----3----4----5----6----7

MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Speech Impairment

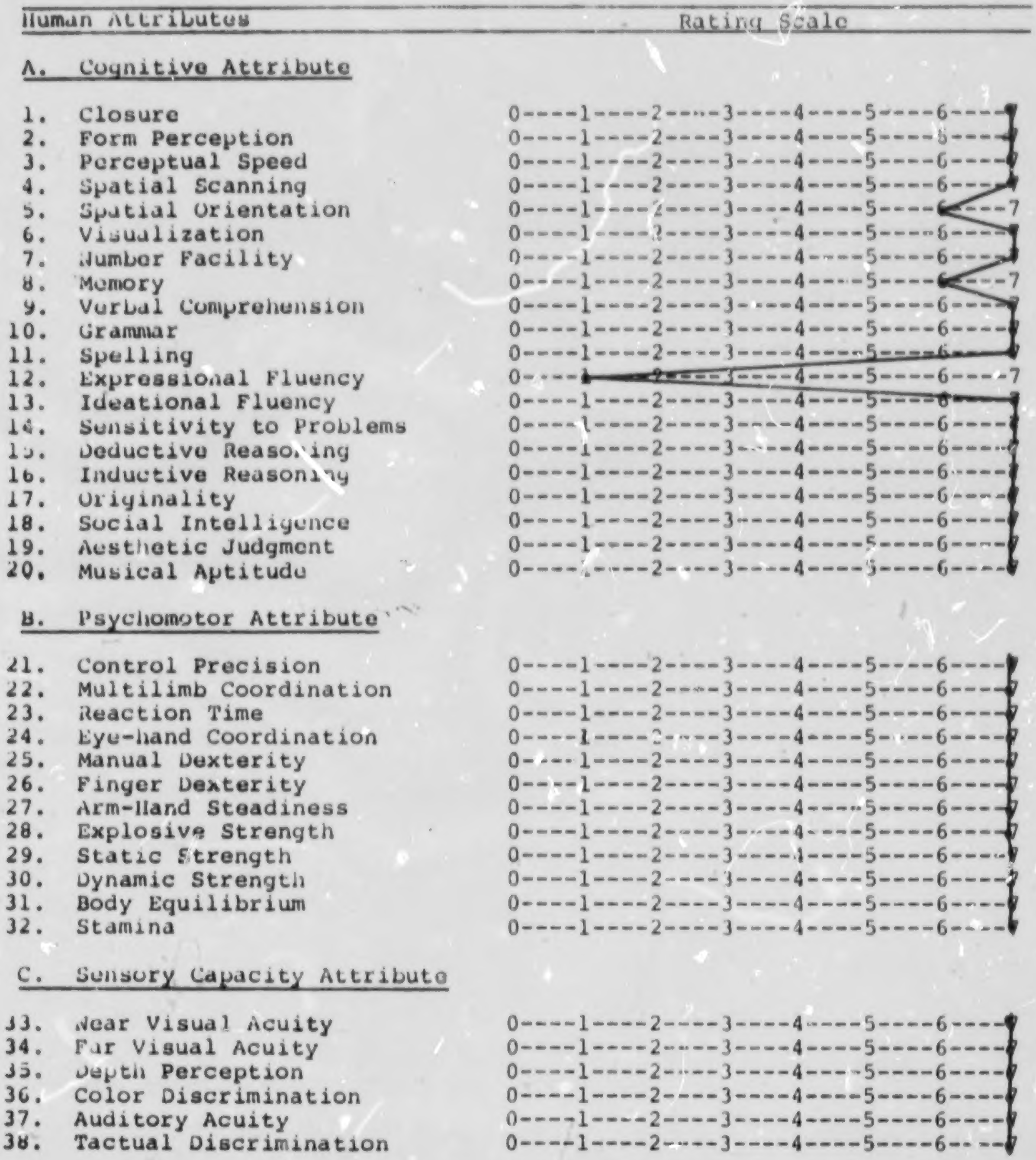


Human Attributes		Rating Scale
A.	Cognitive Attribute	
1.	Closure	0----1----2----3----4----5----6----7
2.	Form Perception	0----1----2----3----4----5----6----7
3.	Perceptual Speed	0----1----2----3----4----5----6----7
4.	Spatial Scanning	0----1----2----3----4----5----6----7
5.	Spatial Orientation	0----1----2----3----4----5----6----7
6.	Visualization	0----1----2----3----4----5----6----7
7.	Number Facility	0----1----2----3----4----5----6----7
8.	Memory	0----1----2----3----4----5----6----7
9.	Verbal Comprehension	0----1----2----3----4----5----6----7
10.	Grammar	0----1----2----3----4----5----6----7
11.	Spelling	0----1----2----3----4----5----6----7
12.	Expressional Fluency	0----1----2----3----4----5----6----7
13.	Ideational Fluency	0----1----2----3----4----5----6----7
14.	Sensitivity to Problems	0----1----2----3----4----5----6----7
15.	Deductive Reasoning	0----1----2----3----4----5----6----7
16.	Inductive Reasoning	0----1----2----3----4----5----6----7
17.	Originality	0----1----2----3----4----5----6----7
18.	Social Intelligence	0----1----2----3----4----5----6----7
19.	Aesthetic Judgment	0----1----2----3----4----5----6----7
20.	Musical Aptitude	0----1----2----3----4----5----6----7
B.	Psychomotor Attribute	
21.	Control Precision	0----1----2----3----4----5----6----7
22.	Multilimb Coordination	0----1----2----3----4----5----6----7
23.	Reaction Time	0----1----2----3----4----5----6----7
24.	Eye-hand Coordination	0----1----2----3----4----5----6----7
25.	Manual Dexterity	0----1----2----3----4----5----6----7
26.	Finger Dexterity	0----1----2----3----4----5----6----7
27.	Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28.	Explosive Strength	0----1----2----3----4----5----6----7
29.	Static Strength	0----1----2----3----4----5----6----7
30.	Dynamic Strength	0----1----2----3----4----5----6----7
31.	Body Equilibrium	0----1----2----3----4----5----6----7
32.	Stamina	0----1----2----3----4----5----6----7
C.	Sensory Capacity Attribute	
33.	Near Visual Acuity	0----1----2----3----4----5----6----7
34.	Far Visual Acuity	0----1----2----3----4----5----6----7
35.	Depth Perception	0----1----2----3----4----5----6----7
36.	Color Discrimination	0----1----2----3----4----5----6----7
37.	Auditory Acuity	0----1----2----3----4----5----6----7
38.	Tactual Discrimination	0----1----2----3----4----5----6----7

MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Speech Impairment



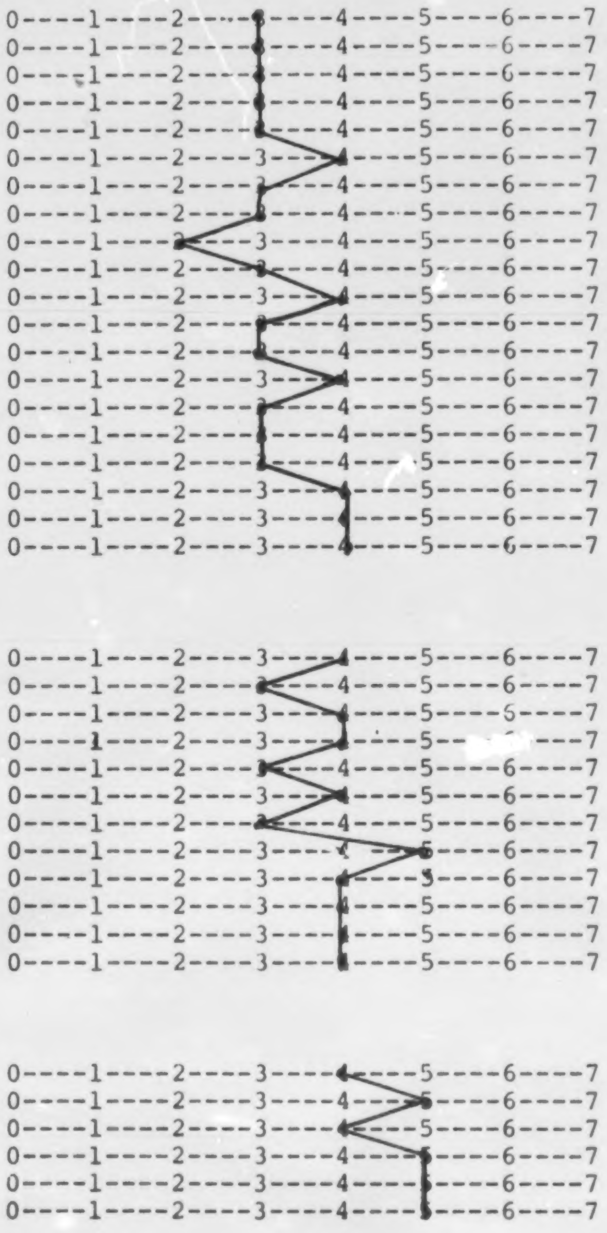
Human Attributes	Rating Scale
A. Cognitive Attribute	
1. Closure	0----1----2----3----4----5----6----7
2. Form Perception	0----1----2----3----4----5----6----7
3. Perceptual Speed	0----1----2----3----4----5----6----7
4. Spatial Scanning	0----1----2----3----4----5----6----7
5. Spatial Orientation	0----1----2----3----4----5----6----7
6. Visualization	0----1----2----3----4----5----6----7
7. Number Facility	0----1----2----3----4----5----6----7
8. Memory	0----1----2----3----4----5----6----7
9. Verbal Comprehension	0----1----2----3----4----5----6----7
10. Grammar	0----1----2----3----4----5----6----7
11. Spelling	0----1----2----3----4----5----6----7
12. Expressional Fluency	0----1----2----3----4----5----6----7
13. Ideational Fluency	0----1----2----3----4----5----6----7
14. Sensitivity to Problems	0----1----2----3----4----5----6----7
15. Deductive Reasoning	0----1----2----3----4----5----6----7
16. Inductive Reasoning	0----1----2----3----4----5----6----7
17. Originality	0----1----2----3----4----5----6----7
18. Social Intelligence	0----1----2----3----4----5----6----7
19. Aesthetic Judgment	0----1----2----3----4----5----6----7
20. Musical Aptitude	0----1----2----3----4----5----6----7
B. Psychomotor Attribute	
21. Control Precision	0----1----2----3----4----5----6----7
22. Multilimb Coordination	0----1----2----3----4----5----6----7
23. Reaction Time	0----1----2----3----4----5----6----7
24. Eye-hand Coordination	0----1----2----3----4----5----6----7
25. Manual Dexterity	0----1----2----3----4----5----6----7
26. Finger Dexterity	0----1----2----3----4----5----6----7
27. Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28. Explosive Strength	0----1----2----3----4----5----6----7
29. Static Strength	0----1----2----3----4----5----6----7
30. Dynamic Strength	0----1----2----3----4----5----6----7
31. Body Equilibrium	0----1----2----3----4----5----6----7
32. Stamina	0----1----2----3----4----5----6----7
C. Sensory Capacity Attribute	
33. Near Visual Acuity	0----1----2----3----4----5----6----7
34. Far Visual Acuity	0----1----2----3----4----5----6----7
35. Depth Perception	0----1----2----3----4----5----6----7
36. Color Discrimination	0----1----2----3----4----5----6----7
37. Auditory Acuity	0----1----2----3----4----5----6----7
38. Tactual Discrimination	0----1----2----3----4----5----6----7

Y-7

MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Emotionally Disturbed



Human Attributes		Rating Scale
A. Cognitive Attribute		
1.	Closure	0----1----2----3----4----5----6----7
2.	Form Perception	0----1----2----3----4----5----6----7
3.	Perceptual Speed	0----1----2----3----4----5----6----7
4.	Spatial Scanning	0----1----2----3----4----5----6----7
5.	Spatial Orientation	0----1----2----3----4----5----6----7
6.	Visualization	0----1----2----3----4----5----6----7
7.	Number Facility	0----1----2----3----4----5----6----7
8.	Memory	0----1----2----3----4----5----6----7
9.	Verbal Comprehension	0----1----2----3----4----5----6----7
10.	Grammar	0----1----2----3----4----5----6----7
11.	Spelling	0----1----2----3----4----5----6----7
12.	Expressional Fluency	0----1----2----3----4----5----6----7
13.	Ideational Fluency	0----1----2----3----4----5----6----7
14.	Sensitivity to Problems	0----1----2----3----4----5----6----7
15.	Deductive Reasoning	0----1----2----3----4----5----6----7
16.	Inductive Reasoning	0----1----2----3----4----5----6----7
17.	Originality	0----1----2----3----4----5----6----7
18.	Social Intelligence	0----1----2----3----4----5----6----7
19.	Aesthetic Judgment	0----1----2----3----4----5----6----7
20.	Musical Aptitude	0----1----2----3----4----5----6----7
B. Psychomotor Attribute		
21.	Control Precision	0----1----2----3----4----5----6----7
22.	Multilimb Coordination	0----1----2----3----4----5----6----7
23.	Reaction Time	0----1----2----3----4----5----6----7
24.	Eye-hand Coordination	0----1----2----3----4----5----6----7
25.	Manual Dexterity	0----1----2----3----4----5----6----7
26.	Finger Dexterity	0----1----2----3----4----5----6----7
27.	Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28.	Explosive Strength	0----1----2----3----4----5----6----7
29.	Static Strength	0----1----2----3----4----5----6----7
30.	Dynamic Strength	0----1----2----3----4----5----6----7
31.	Body Equilibrium	0----1----2----3----4----5----6----7
32.	Stamina	0----1----2----3----4----5----6----7
C. Sensory Capacity Attribute		
33.	Near Visual Acuity	0----1----2----3----4----5----6----7
34.	Far Visual Acuity	0----1----2----3----4----5----6----7
35.	Depth Perception	0----1----2----3----4----5----6----7
36.	Color Discrimination	0----1----2----3----4----5----6----7
37.	Auditory Acuity	0----1----2----3----4----5----6----7
38.	Tactual Discrimination	0----1----2----3----4----5----6----7

MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

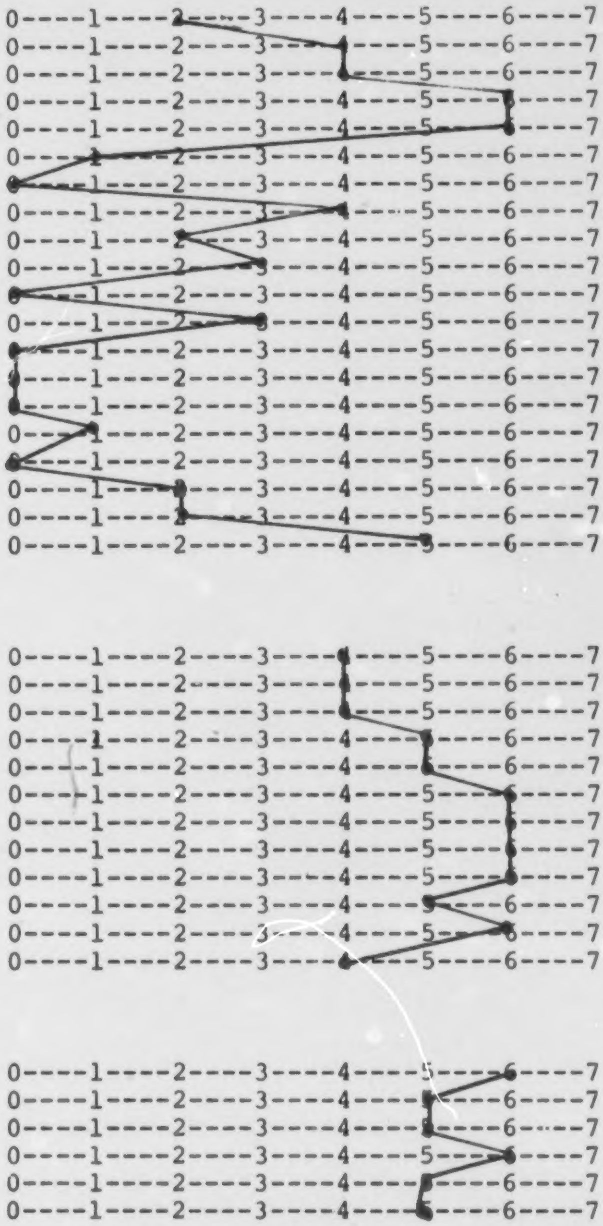
Handicapping Condition: Speech Impairment

Human Attributes	Rating Scale
A. Cognitive Attribute	
1. Closure	0----1----2----3----4----5----6----7
2. Form Perception	0----1----2----3----4----5----6----7
3. Perceptual Speed	0----1----2----3----4----5----6----7
4. Spatial Scanning	0----1----2----3----4----5----6----7
5. Spatial Orientation	0----1----2----3----4----5----6----7
6. Visualization	0----1----2----3----4----5----6----7
7. Number Facility	0----1----2----3----4----5----6----7
8. Memory	0----1----2----3----4----5----6----7
9. Verbal Comprehension	0----1----2----3----4----5----6----7
10. Grammar	0----1----2----3----4----5----6----7
11. Spelling	0----1----2----3----4----5----6----7
12. Expressional Fluency	0----1----2----3----4----5----6----7
13. Ideational Fluency	0----1----2----3----4----5----6----7
14. Sensitivity to Problems	0----1----2----3----4----5----6----7
15. Deductive Reasoning	0----1----2----3----4----5----6----7
16. Inductive Reasoning	0----1----2----3----4----5----6----7
17. Originality	0----1----2----3----4----5----6----7
18. Social Intelligence	0----1----2----3----4----5----6----7
19. Aesthetic Judgment	0----1----2----3----4----5----6----7
20. Musical Aptitude	0----1----2----3----4----5----6----7
B. Psychomotor Attribute	
21. Control Precision	0----1----2----3----4----5----6----7
22. Multilimb Coordination	0----1----2----3----4----5----6----7
23. Reaction Time	0----1----2----3----4----5----6----7
24. Eye-hand Coordination	0----1----2----3----4----5----6----7
25. Manual Dexterity	0----1----2----3----4----5----6----7
26. Finger Dexterity	0----1----2----3----4----5----6----7
27. Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28. Explosive Strength	0----1----2----3----4----5----6----7
29. Static Strength	0----1----2----3----4----5----6----7
30. Dynamic Strength	0----1----2----3----4----5----6----7
31. Body Equilibrium	0----1----2----3----4----5----6----7
32. Stamina	0----1----2----3----4----5----6----7
C. Sensory Capacity Attribute	
33. Near Visual Acuity	0----1----2----3----4----5----6----7
34. Far Visual Acuity	0----1----2----3----4----5----6----7
35. Depth Perception	0----1----2----3----4----5----6----7
36. Color Discrimination	0----1----2----3----4----5----6----7
37. Auditory Acuity	0----1----2----3----4----5----6----7
38. Tactual Discrimination	0----1----2----3----4----5----6----7

MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Mentally Retarded



Human Attributes	Rating Scale
A. Cognitive Attribute	
1. Closure	0----1----2----3----4----5----6----7
2. Form Perception	0----1----2----3----4----5----6----7
3. Perceptual Speed	0----1----2----3----4----5----6----7
4. Spatial Scanning	0----1----2----3----4----5----6----7
5. Spatial Orientation	0----1----2----3----4----5----6----7
6. Visualization	0----1----2----3----4----5----6----7
7. Number Facility	0----1----2----3----4----5----6----7
8. Memory	0----1----2----3----4----5----6----7
9. Verbal Comprehension	0----1----2----3----4----5----6----7
10. Grammar	0----1----2----3----4----5----6----7
11. Spelling	0----1----2----3----4----5----6----7
12. Expressional Fluency	0----1----2----3----4----5----6----7
13. Ideational Fluency	0----1----2----3----4----5----6----7
14. Sensitivity to Problems	0----1----2----3----4----5----6----7
15. Deductive Reasoning	0----1----2----3----4----5----6----7
16. Inductive Reasoning	0----1----2----3----4----5----6----7
17. Originality	0----1----2----3----4----5----6----7
18. Social Intelligence	0----1----2----3----4----5----6----7
19. Aesthetic Judgment	0----1----2----3----4----5----6----7
20. Musical Aptitude	0----1----2----3----4----5----6----7
B. Psychomotor Attribute	
21. Control Precision	0----1----2----3----4----5----6----7
22. Multilimb Coordination	0----1----2----3----4----5----6----7
23. Reaction Time	0----1----2----3----4----5----6----7
24. Eye-hand Coordination	0----1----2----3----4----5----6----7
25. Manual Dexterity	0----1----2----3----4----5----6----7
26. Finger Dexterity	0----1----2----3----4----5----6----7
27. Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28. Explosive Strength	0----1----2----3----4----5----6----7
29. Static Strength	0----1----2----3----4----5----6----7
30. Dynamic Strength	0----1----2----3----4----5----6----7
31. Body Equilibrium	0----1----2----3----4----5----6----7
32. Stamina	0----1----2----3----4----5----6----7
C. Sensory Capacity Attribute	
33. Near Visual Acuity	0----1----2----3----4----5----6----7
34. Far Visual Acuity	0----1----2----3----4----5----6----7
35. Depth Perception	0----1----2----3----4----5----6----7
36. Color Discrimination	0----1----2----3----4----5----6----7
37. Auditory Acuity	0----1----2----3----4----5----6----7
38. Tactual Discrimination	0----1----2----3----4----5----6----7

MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Mentally Retarded

Human Attributes — Rating Scale

A. Cognitive Attribute

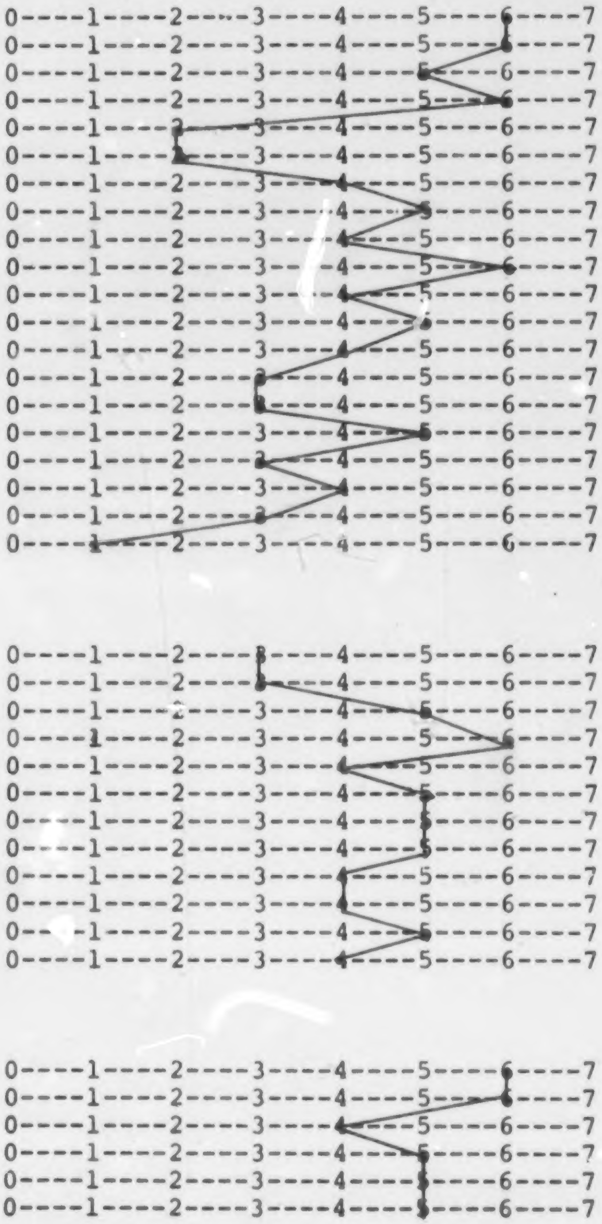
1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

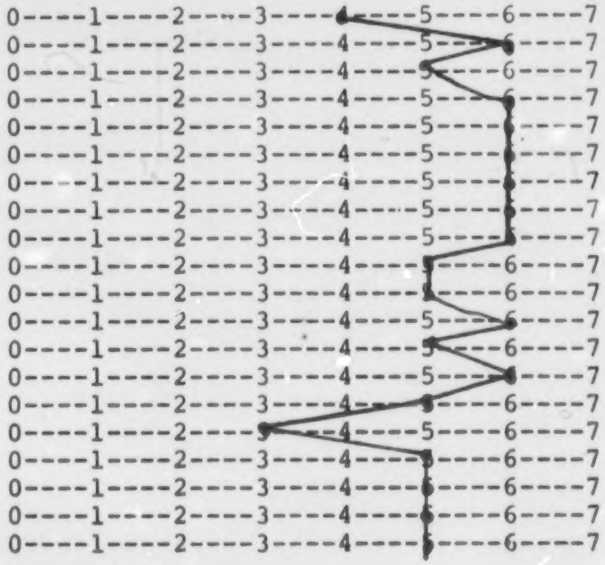
INDIVIDUAL RESPONDENT

Handicapping Condition: Mentally Retarded

Human Attributes — Rating Scale

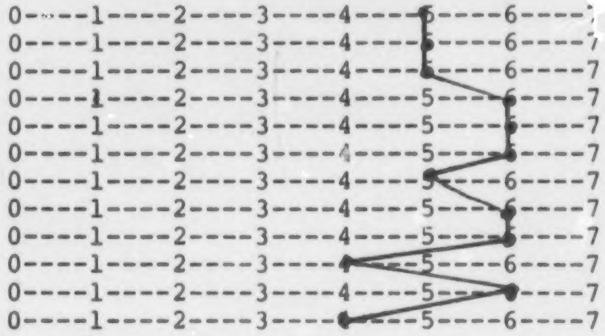
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



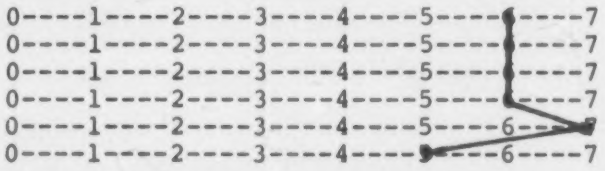
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

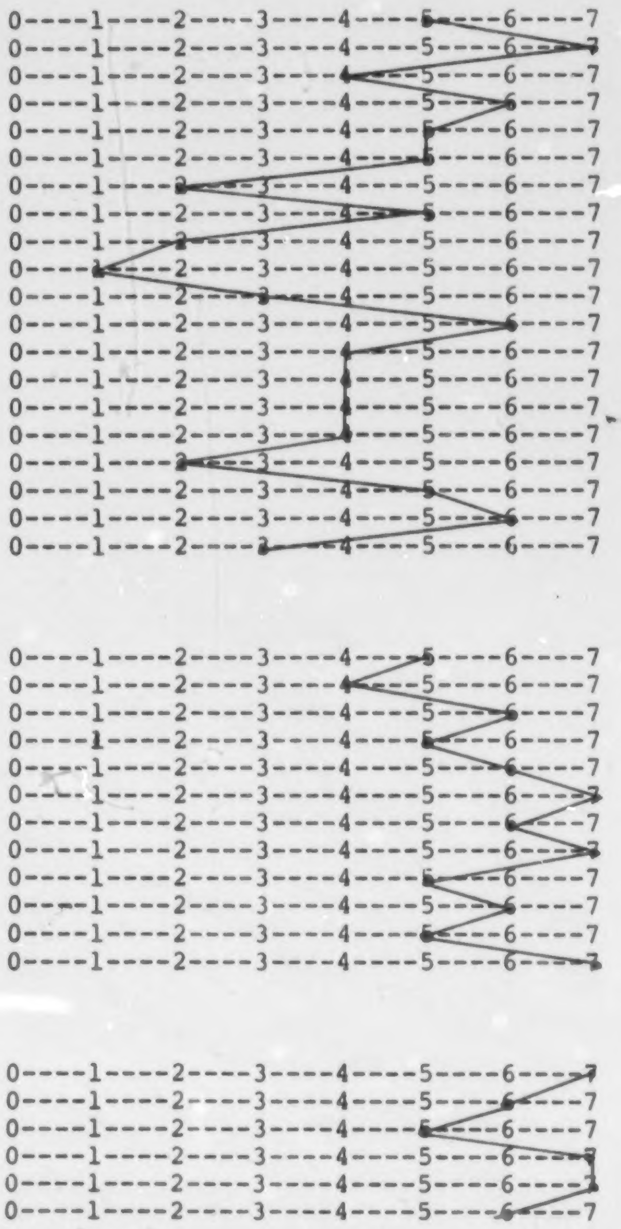
33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Mentally Retarded



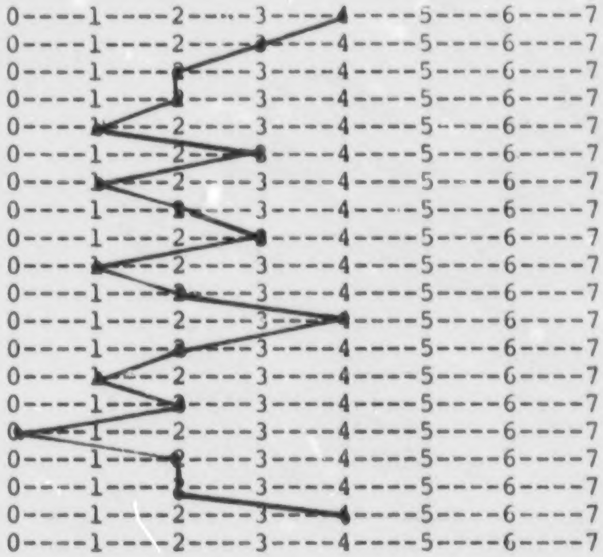
Human Attributes		Rating Scale
A. Cognitive Attribute		
1.	Closure	0----1----2----3----4----5----6----7
2.	Form Perception	0----1----2----3----4----5----6----7
3.	Perceptual Speed	0----1----2----3----4----5----6----7
4.	Spatial Scanning	0----1----2----3----4----5----6----7
5.	Spatial Orientation	0----1----2----3----4----5----6----7
6.	Visualization	0----1----2----3----4----5----6----7
7.	Number Facility	0----1----2----3----4----5----6----7
8.	Memory	0----1----2----3----4----5----6----7
9.	Verbal Comprehension	0----1----2----3----4----5----6----7
10.	Grammar	0----1----2----3----4----5----6----7
11.	Spelling	0----1----2----3----4----5----6----7
12.	Expressional Fluency	0----1----2----3----4----5----6----7
13.	Ideational Fluency	0----1----2----3----4----5----6----7
14.	Sensitivity to Problems	0----1----2----3----4----5----6----7
15.	Deductive Reasoning	0----1----2----3----4----5----6----7
16.	Inductive Reasoning	0----1----2----3----4----5----6----7
17.	Originality	0----1----2----3----4----5----6----7
18.	Social Intelligence	0----1----2----3----4----5----6----7
19.	Aesthetic Judgment	0----1----2----3----4----5----6----7
20.	Musical Aptitude	0----1----2----3----4----5----6----7
B. Psychomotor Attribute		
21.	Control Precision	0----1----2----3----4----5----6----7
22.	Multilimb Coordination	0----1----2----3----4----5----6----7
23.	Reaction Time	0----1----2----3----4----5----6----7
24.	Eye-hand Coordination	0----1----2----3----4----5----6----7
25.	Manual Dexterity	0----1----2----3----4----5----6----7
26.	Finger Dexterity	0----1----2----3----4----5----6----7
27.	Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28.	Explosive Strength	0----1----2----3----4----5----6----7
29.	Static Strength	0----1----2----3----4----5----6----7
30.	Dynamic Strength	0----1----2----3----4----5----6----7
31.	Body Equilibrium	0----1----2----3----4----5----6----7
32.	Stamina	0----1----2----3----4----5----6----7
C. Sensory Capacity Attribute		
33.	Near Visual Acuity	0----1----2----3----4----5----6----7
34.	Far Visual Acuity	0----1----2----3----4----5----6----7
35.	Depth Perception	0----1----2----3----4----5----6----7
36.	Color Discrimination	0----1----2----3----4----5----6----7
37.	Auditory Acuity	0----1----2----3----4----5----6----7
38.	Tactual Discrimination	0----1----2----3----4----5----6----7

MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

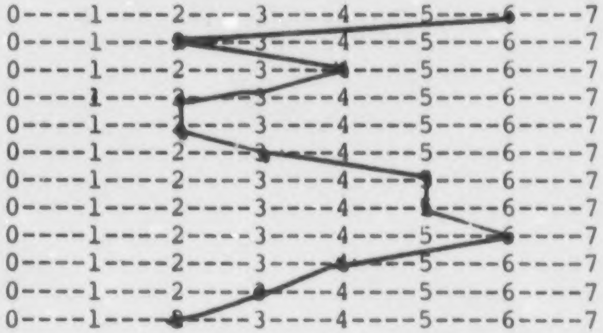
INDIVIDUAL RESPONDENT

Handicapping Condition: Non Sensory Physical

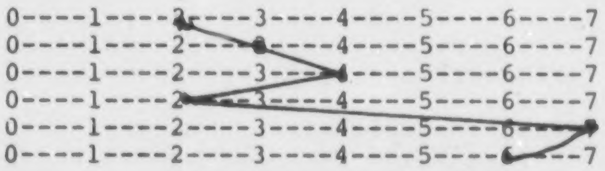
Human Attributes	Rating Scale
A. Cognitive Attribute	
1. Closure	0----1----2----3----4----5----6----7
2. Form Perception	0----1----2----3----4----5----6----7
3. Perceptual Speed	0----1----2----3----4----5----6----7
4. Spatial Scanning	0----1----2----3----4----5----6----7
5. Spatial Orientation	0----1----2----3----4----5----6----7
6. Visualization	0----1----2----3----4----5----6----7
7. Number Facility	0----1----2----3----4----5----6----7
8. Memory	0----1----2----3----4----5----6----7
9. Verbal Comprehension	0----1----2----3----4----5----6----7
10. Grammar	0----1----2----3----4----5----6----7
11. Spelling	0----1----2----3----4----5----6----7
12. Expressional Fluency	0----1----2----3----4----5----6----7
13. Ideational Fluency	0----1----2----3----4----5----6----7
14. Sensitivity to Problems	0----1----2----3----4----5----6----7
15. Deductive Reasoning	0----1----2----3----4----5----6----7
16. Inductive Reasoning	0----1----2----3----4----5----6----7
17. Originality	0----1----2----3----4----5----6----7
18. Social Intelligence	0----1----2----3----4----5----6----7
19. Aesthetic Judgment	0----1----2----3----4----5----6----7
20. Musical Aptitude	0----1----2----3----4----5----6----7



B. Psychomotor Attribute	
21. Control Precision	0----1----2----3----4----5----6----7
22. Multilimb Coordination	0----1----2----3----4----5----6----7
23. Reaction Time	0----1----2----3----4----5----6----7
24. Eye-hand Coordination	0----1----2----3----4----5----6----7
25. Manual Dexterity	0----1----2----3----4----5----6----7
26. Finger Dexterity	0----1----2----3----4----5----6----7
27. Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28. Explosive Strength	0----1----2----3----4----5----6----7
29. Static Strength	0----1----2----3----4----5----6----7
30. Dynamic Strength	0----1----2----3----4----5----6----7
31. Body Equilibrium	0----1----2----3----4----5----6----7
32. Stamina	0----1----2----3----4----5----6----7



C. Sensory Capacity Attribute	
33. Near Visual Acuity	0----1----2----3----4----5----6----7
34. Far Visual Acuity	0----1----2----3----4----5----6----7
35. Depth Perception	0----1----2----3----4----5----6----7
36. Color Discrimination	0----1----2----3----4----5----6----7
37. Auditory Acuity	0----1----2----3----4----5----6----7
38. Tactual Discrimination	0----1----2----3----4----5----6----7

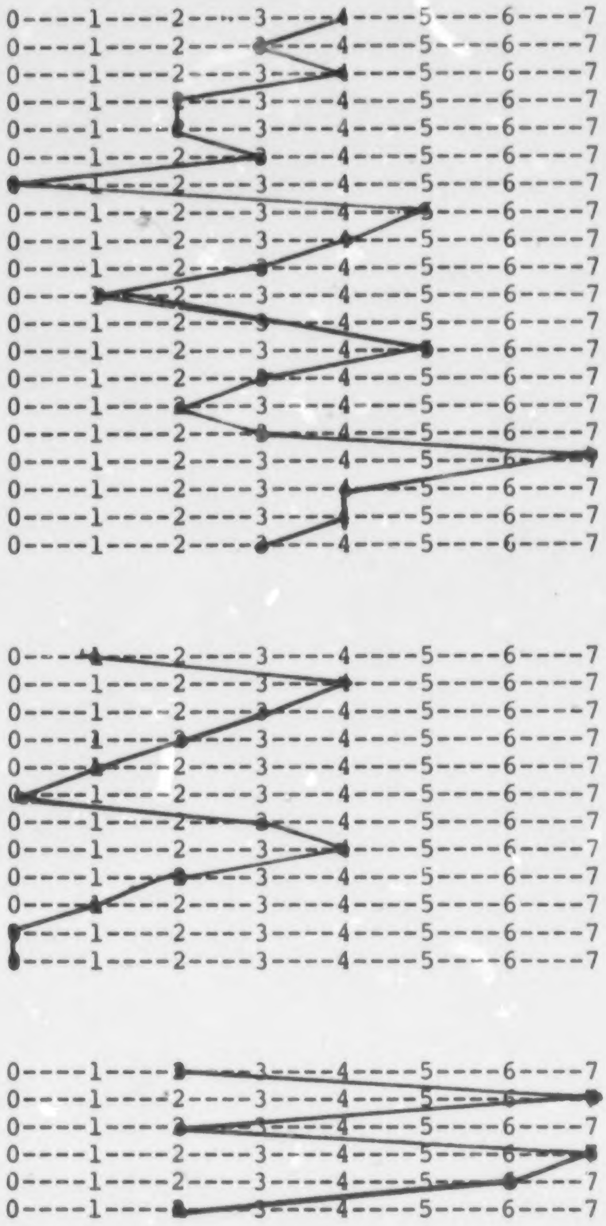


MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Non Sensory Physical

Human Attributes — Rating Scale



A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

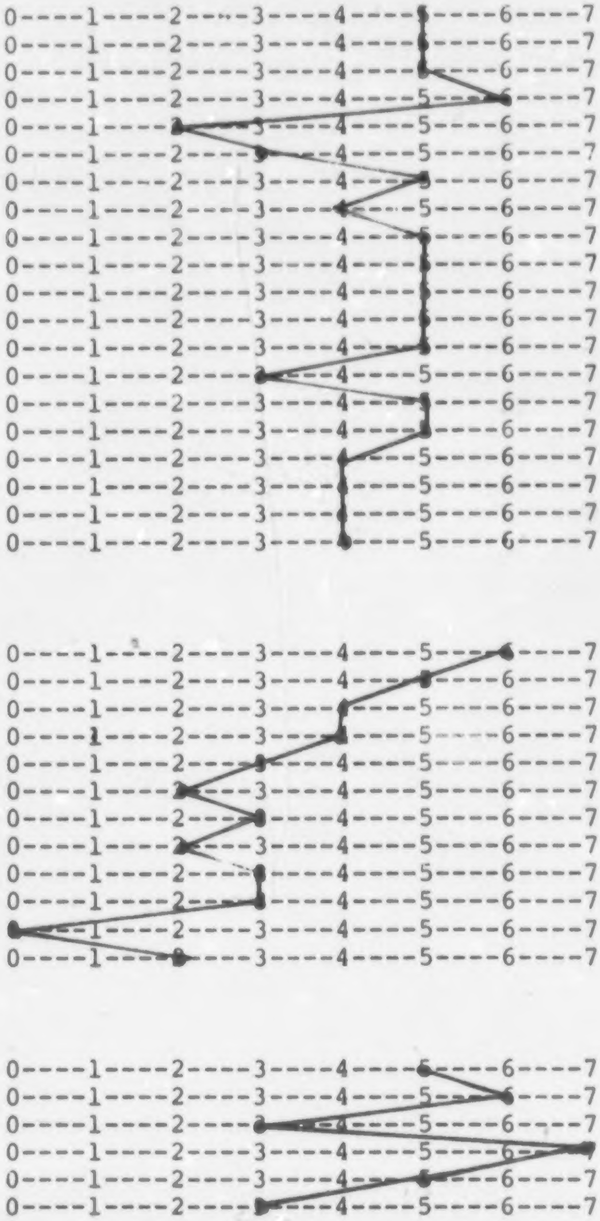
33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Non Sensory Physical

Human Attributes — Rating Scale



A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

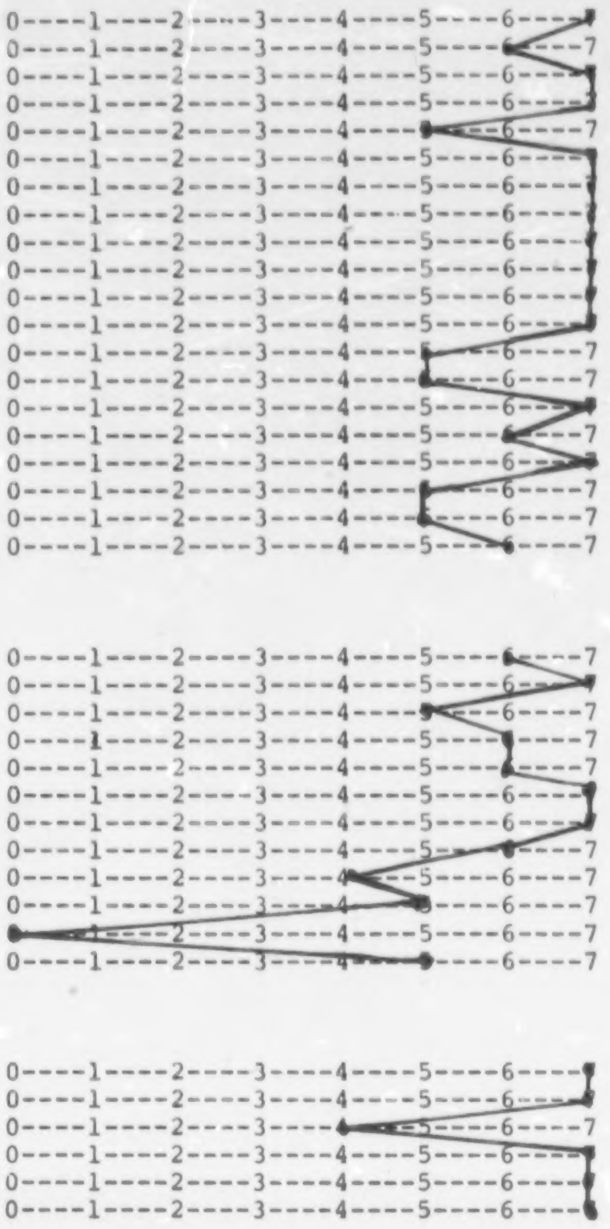
C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Non Sensory Physical



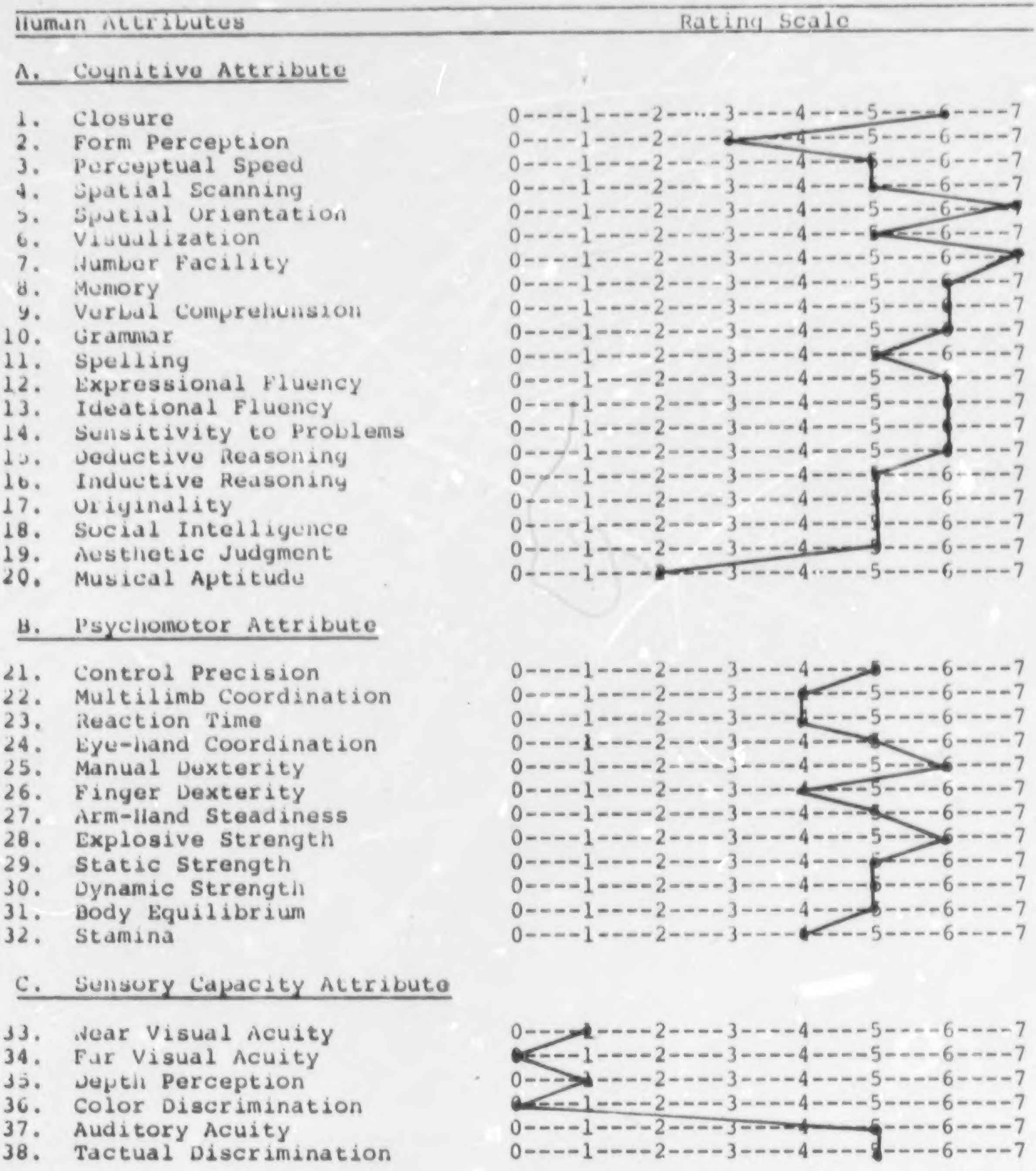
Human Attributes	Rating Scale
A. Cognitive Attribute	
1. Closure	0----1----2----3----4----5----6----7
2. Form Perception	0----1----2----3----4----5----6----7
3. Perceptual Speed	0----1----2----3----4----5----6----7
4. Spatial Scanning	0----1----2----3----4----5----6----7
5. Spatial Orientation	0----1----2----3----4----5----6----7
6. Visualization	0----1----2----3----4----5----6----7
7. Number Facility	0----1----2----3----4----5----6----7
8. Memory	0----1----2----3----4----5----6----7
9. Verbal Comprehension	0----1----2----3----4----5----6----7
10. Grammar	0----1----2----3----4----5----6----7
11. Spelling	0----1----2----3----4----5----6----7
12. Expressional Fluency	0----1----2----3----4----5----6----7
13. Ideational Fluency	0----1----2----3----4----5----6----7
14. Sensitivity to Problems	0----1----2----3----4----5----6----7
15. Deductive Reasoning	0----1----2----3----4----5----6----7
16. Inductive Reasoning	0----1----2----3----4----5----6----7
17. Originality	0----1----2----3----4----5----6----7
18. Social Intelligence	0----1----2----3----4----5----6----7
19. Aesthetic Judgment	0----1----2----3----4----5----6----7
20. Musical Aptitude	0----1----2----3----4----5----6----7
B. Psychomotor Attribute	
21. Control Precision	0----1----2----3----4----5----6----7
22. Multilimb Coordination	0----1----2----3----4----5----6----7
23. Reaction Time	0----1----2----3----4----5----6----7
24. Eye-hand Coordination	0----1----2----3----4----5----6----7
25. Manual Dexterity	0----1----2----3----4----5----6----7
26. Finger Dexterity	0----1----2----3----4----5----6----7
27. Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28. Explosive Strength	0----1----2----3----4----5----6----7
29. Static Strength	0----1----2----3----4----5----6----7
30. Dynamic Strength	0----1----2----3----4----5----6----7
31. Body Equilibrium	0----1----2----3----4----5----6----7
32. Stamina	0----1----2----3----4----5----6----7
C. Sensory Capacity Attribute	
33. Near Visual Acuity	0----1----2----3----4----5----6----7
34. Far Visual Acuity	0----1----2----3----4----5----6----7
35. Depth Perception	0----1----2----3----4----5----6----7
36. Color Discrimination	0----1----2----3----4----5----6----7
37. Auditory Acuity	0----1----2----3----4----5----6----7
38. Tactual Discrimination	0----1----2----3----4----5----6----7

Y-16

MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Partially Sighted



A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

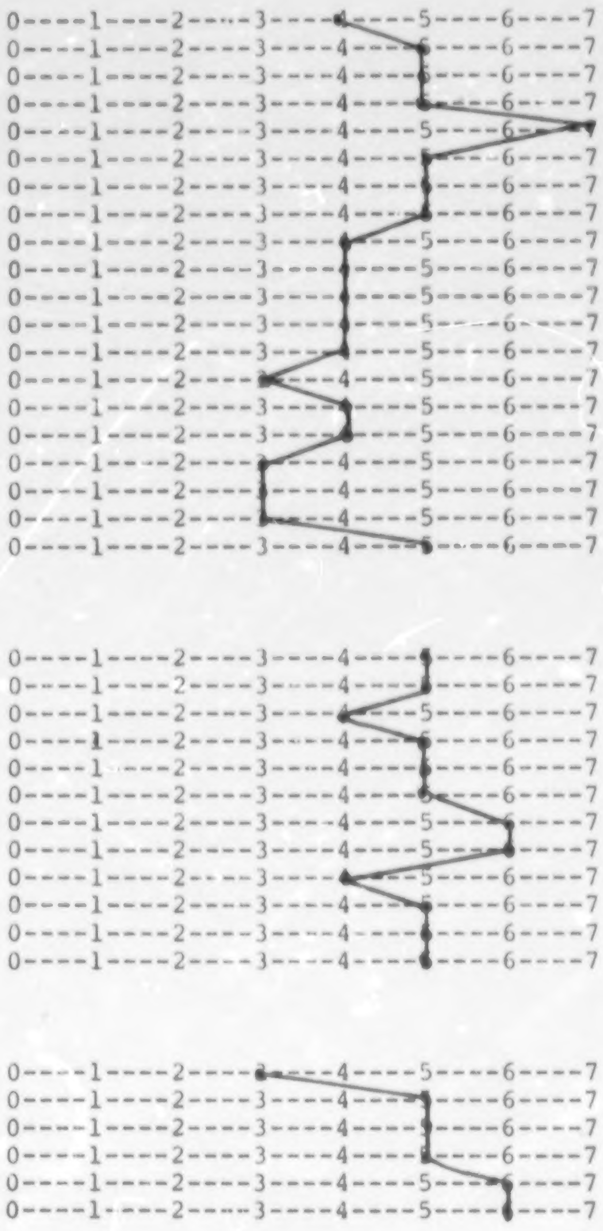
C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination

MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Partially Sighted

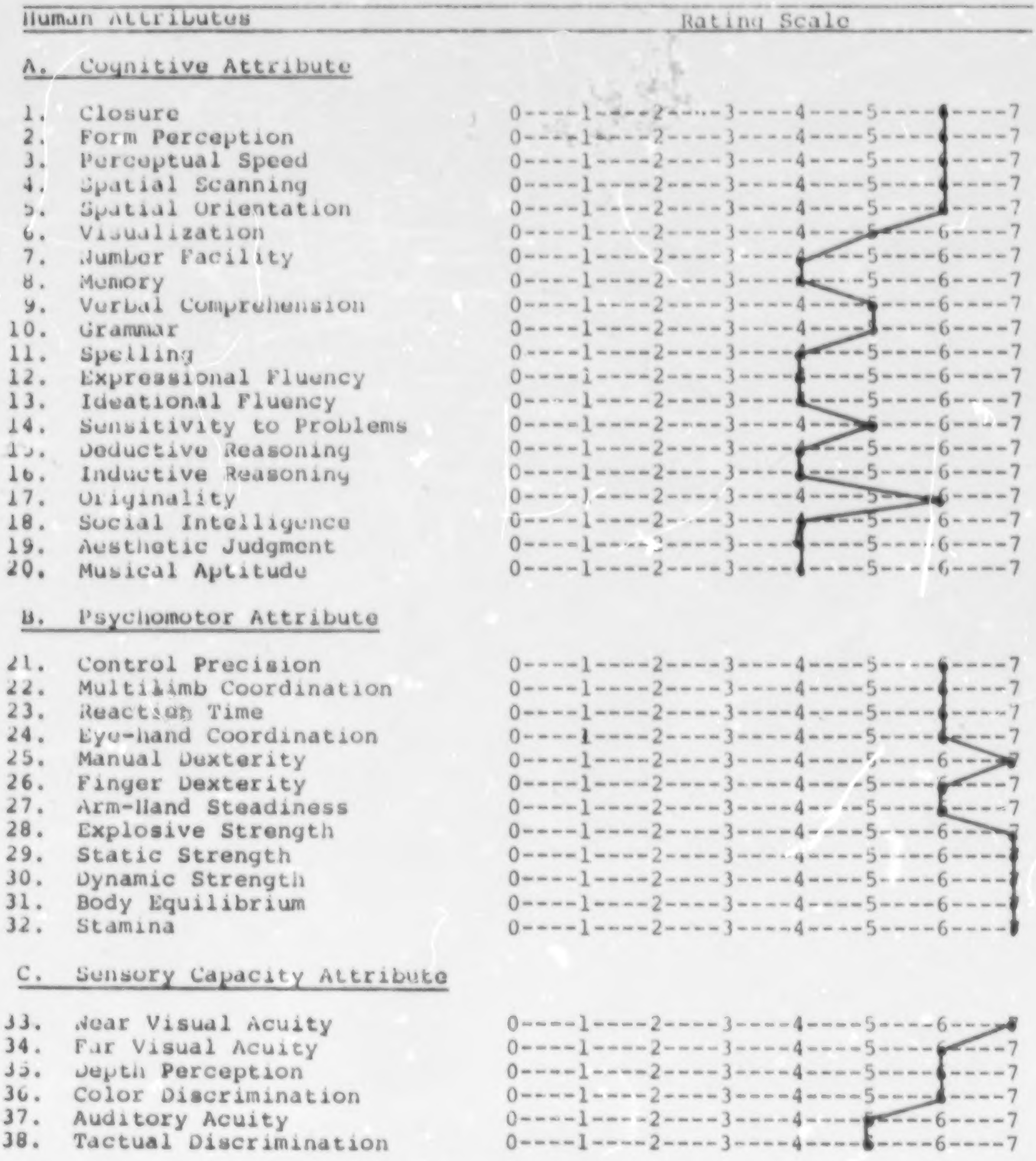


Human Attributes	Rating Scale
A. Cognitive Attribute	
1. Closure	0----1----2----3----4----5----6----7
2. Form Perception	0----1----2----3----4----5----6----7
3. Perceptual Speed	0----1----2----3----4----5----6----7
4. Spatial Scanning	0----1----2----3----4----5----6----7
5. Spatial Orientation	0----1----2----3----4----5----6----7
6. Visualization	0----1----2----3----4----5----6----7
7. Number Facility	0----1----2----3----4----5----6----7
8. Memory	0----1----2----3----4----5----6----7
9. Verbal Comprehension	0----1----2----3----4----5----6----7
10. Grammar	0----1----2----3----4----5----6----7
11. Spelling	0----1----2----3----4----5----6----7
12. Expressional Fluency	0----1----2----3----4----5----6----7
13. Ideational Fluency	0----1----2----3----4----5----6----7
14. Sensitivity to Problems	0----1----2----3----4----5----6----7
15. Deductive Reasoning	0----1----2----3----4----5----6----7
16. Inductive Reasoning	0----1----2----3----4----5----6----7
17. Originality	0----1----2----3----4----5----6----7
18. Social Intelligence	0----1----2----3----4----5----6----7
19. Aesthetic Judgment	0----1----2----3----4----5----6----7
20. Musical Aptitude	0----1----2----3----4----5----6----7
B. Psychomotor Attribute	
21. Control Precision	0----1----2----3----4----5----6----7
22. Multilimb Coordination	0----1----2----3----4----5----6----7
23. Reaction Time	0----1----2----3----4----5----6----7
24. Eye-hand Coordination	0----1----2----3----4----5----6----7
25. Manual Dexterity	0----1----2----3----4----5----6----7
26. Finger Dexterity	0----1----2----3----4----5----6----7
27. Arm-hand Steadiness	0----1----2----3----4----5----6----7
28. Explosive Strength	0----1----2----3----4----5----6----7
29. Static Strength	0----1----2----3----4----5----6----7
30. Dynamic Strength	0----1----2----3----4----5----6----7
31. Body Equilibrium	0----1----2----3----4----5----6----7
32. Stamina	0----1----2----3----4----5----6----7
C. Sensory Capacity Attribute	
33. Near Visual Acuity	0----1----2----3----4----5----6----7
34. Far Visual Acuity	0----1----2----3----4----5----6----7
35. Depth Perception	0----1----2----3----4----5----6----7
36. Color Discrimination	0----1----2----3----4----5----6----7
37. Auditory Acuity	0----1----2----3----4----5----6----7
38. Tactual Discrimination	0----1----2----3----4----5----6----7

MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Partially Sighted



Human Attributes	Rating Scale
A. Cognitive Attribute	
1. Closure	0----1----2----3----4----5----6----7
2. Form Perception	0----1----2----3----4----5----6----7
3. Perceptual Speed	0----1----2----3----4----5----6----7
4. Spatial Scanning	0----1----2----3----4----5----6----7
5. Spatial Orientation	0----1----2----3----4----5----6----7
6. Visualization	0----1----2----3----4----5----6----7
7. Number Facility	0----1----2----3----4----5----6----7
8. Memory	0----1----2----3----4----5----6----7
9. Verbal Comprehension	0----1----2----3----4----5----6----7
10. Grammar	0----1----2----3----4----5----6----7
11. Spelling	0----1----2----3----4----5----6----7
12. Expressional Fluency	0----1----2----3----4----5----6----7
13. Ideational Fluency	0----1----2----3----4----5----6----7
14. Sensitivity to Problems	0----1----2----3----4----5----6----7
15. Deductive Reasoning	0----1----2----3----4----5----6----7
16. Inductive Reasoning	0----1----2----3----4----5----6----7
17. Originality	0----1----2----3----4----5----6----7
18. Social Intelligence	0----1----2----3----4----5----6----7
19. Aesthetic Judgment	0----1----2----3----4----5----6----7
20. Musical Aptitude	0----1----2----3----4----5----6----7
B. Psychomotor Attribute	
21. Control Precision	0----1----2----3----4----5----6----7
22. Multilimb Coordination	0----1----2----3----4----5----6----7
23. Reaction Time	0----1----2----3----4----5----6----7
24. Eye-hand Coordination	0----1----2----3----4----5----6----7
25. Manual Dexterity	0----1----2----3----4----5----6----7
26. Finger Dexterity	0----1----2----3----4----5----6----7
27. Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28. Explosive Strength	0----1----2----3----4----5----6----7
29. Static Strength	0----1----2----3----4----5----6----7
30. Dynamic Strength	0----1----2----3----4----5----6----7
31. Body Equilibrium	0----1----2----3----4----5----6----7
32. Stamina	0----1----2----3----4----5----6----7
C. Sensory Capacity Attribute	
33. Near Visual Acuity	0----1----2----3----4----5----6----7
34. Far Visual Acuity	0----1----2----3----4----5----6----7
35. Depth Perception	0----1----2----3----4----5----6----7
36. Color Discrimination	0----1----2----3----4----5----6----7
37. Auditory Acuity	0----1----2----3----4----5----6----7
38. Tactual Discrimination	0----1----2----3----4----5----6----7

MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

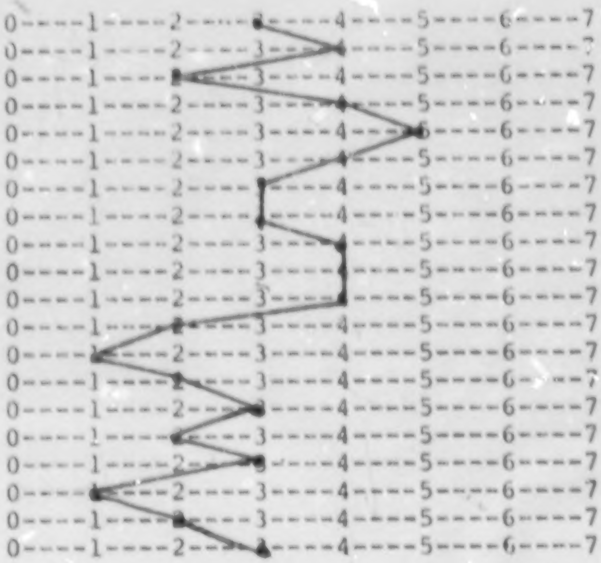
INDIVIDUAL RESPONDENT

Handicapping Condition: Emotionally Disturbed

Human Attributes — Rating Scale

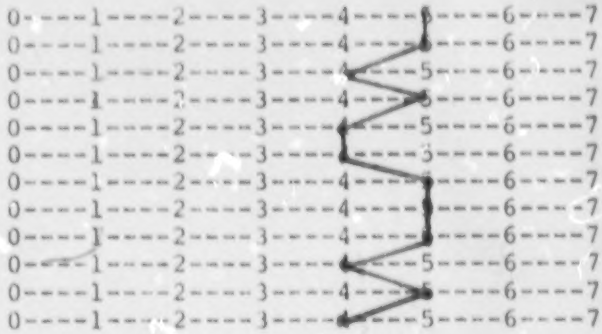
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



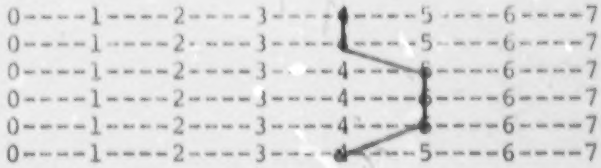
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

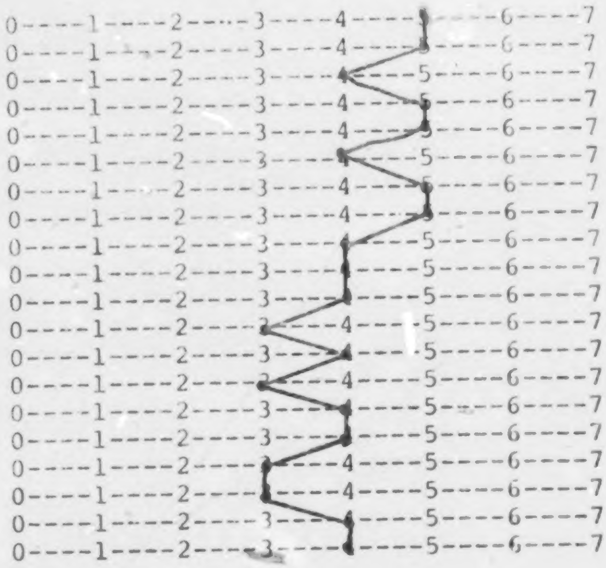
INDIVIDUAL RESPONDENT

Handicapping Condition: Emotionally Disturbed

Human Attributes — Rating Scale

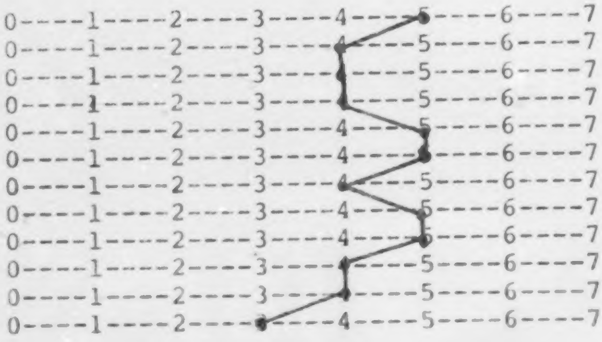
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



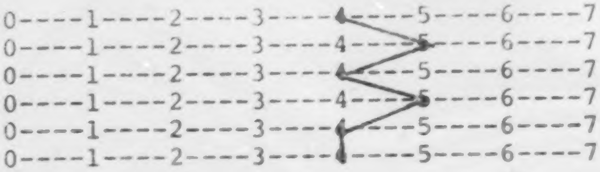
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Emotionally Disturbed

Human Attributes — Rating Scale

A. Cognitive Attribute

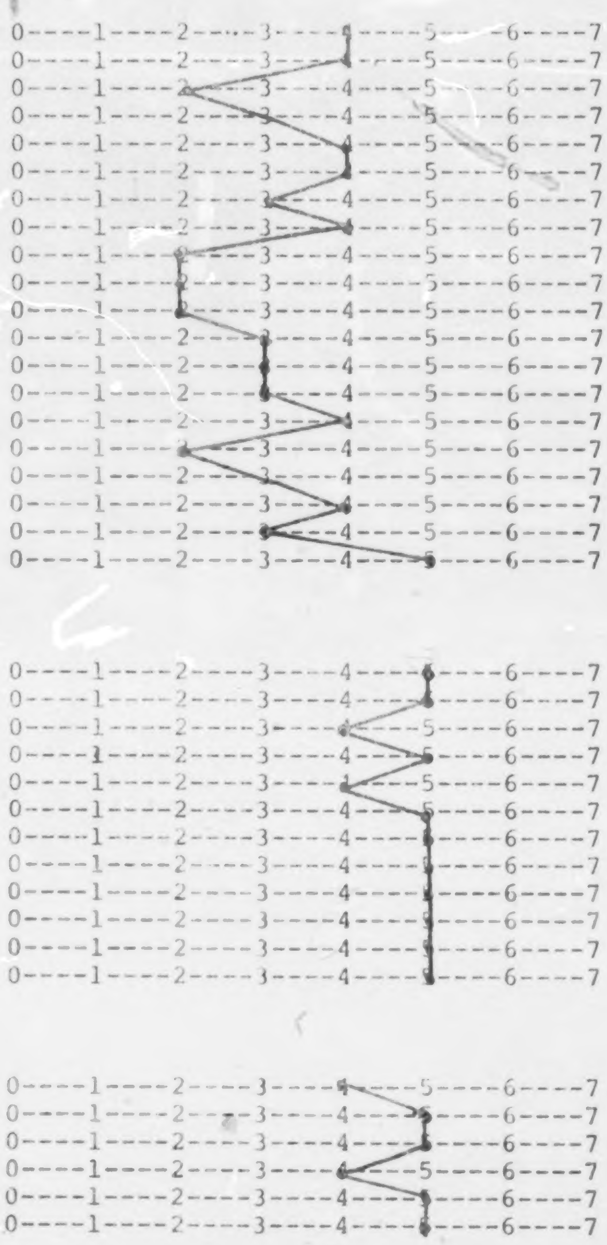
1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

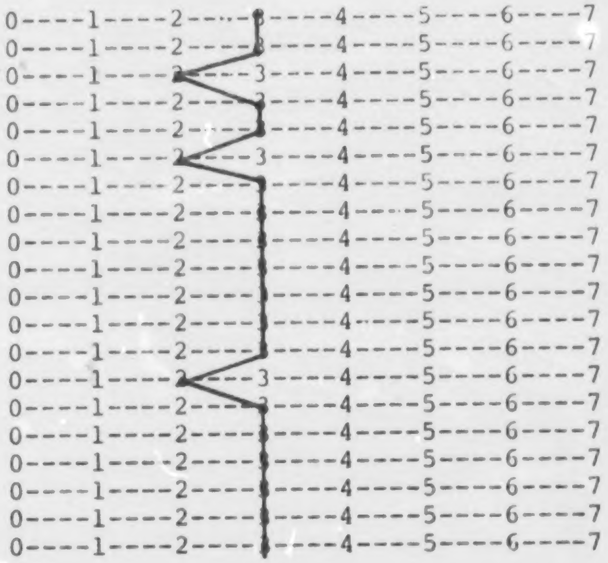
INDIVIDUAL RESPONDENT

Handicapping Condition: Learning Disabled

Human Attributes | Rating Scale

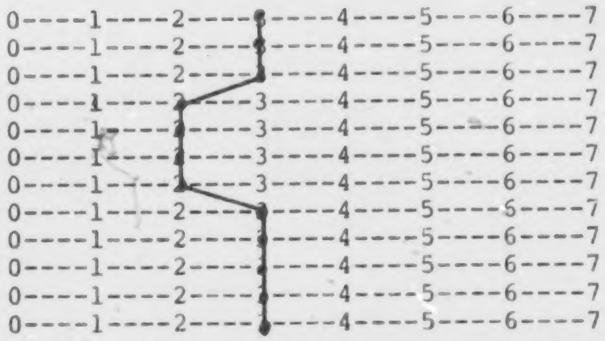
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



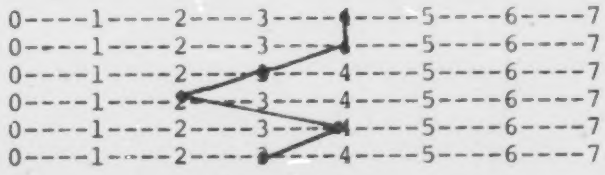
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

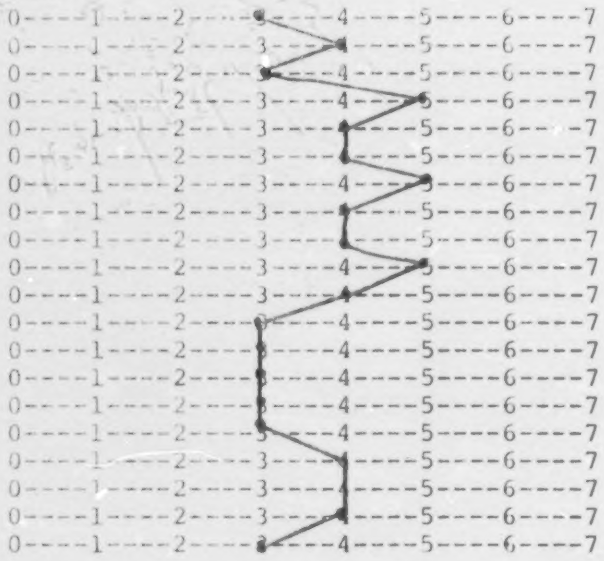
INDIVIDUAL RESPONDENT

Handicapping Condition: Learning Disabled

Human Attributes — Rating Scale

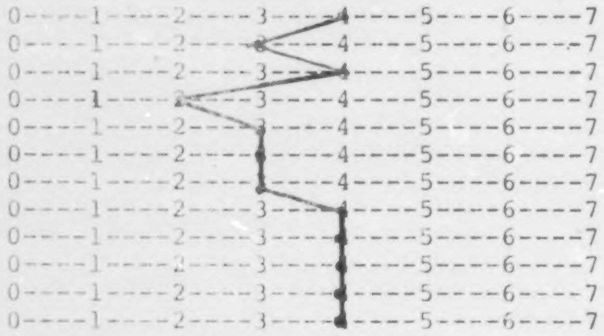
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



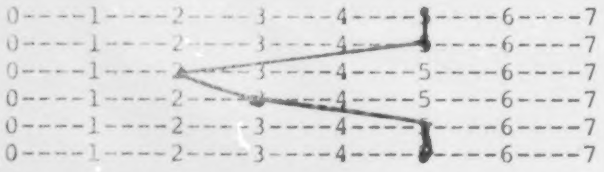
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

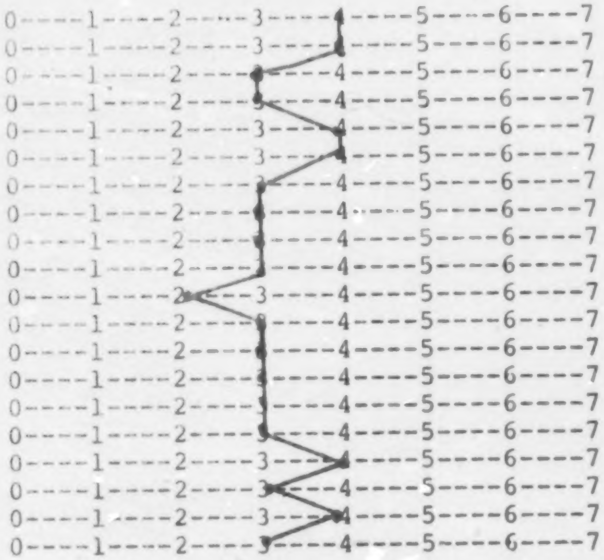
INDIVIDUAL RESPONDENT

Handicapping Condition: Learning Disabled

Human Attributes — Rating Scale

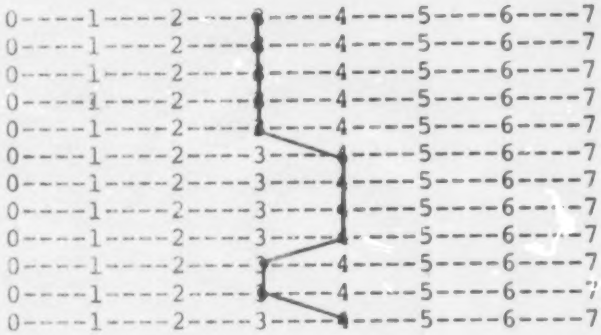
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



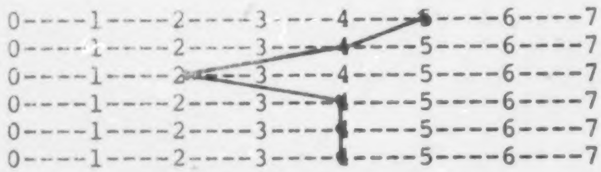
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

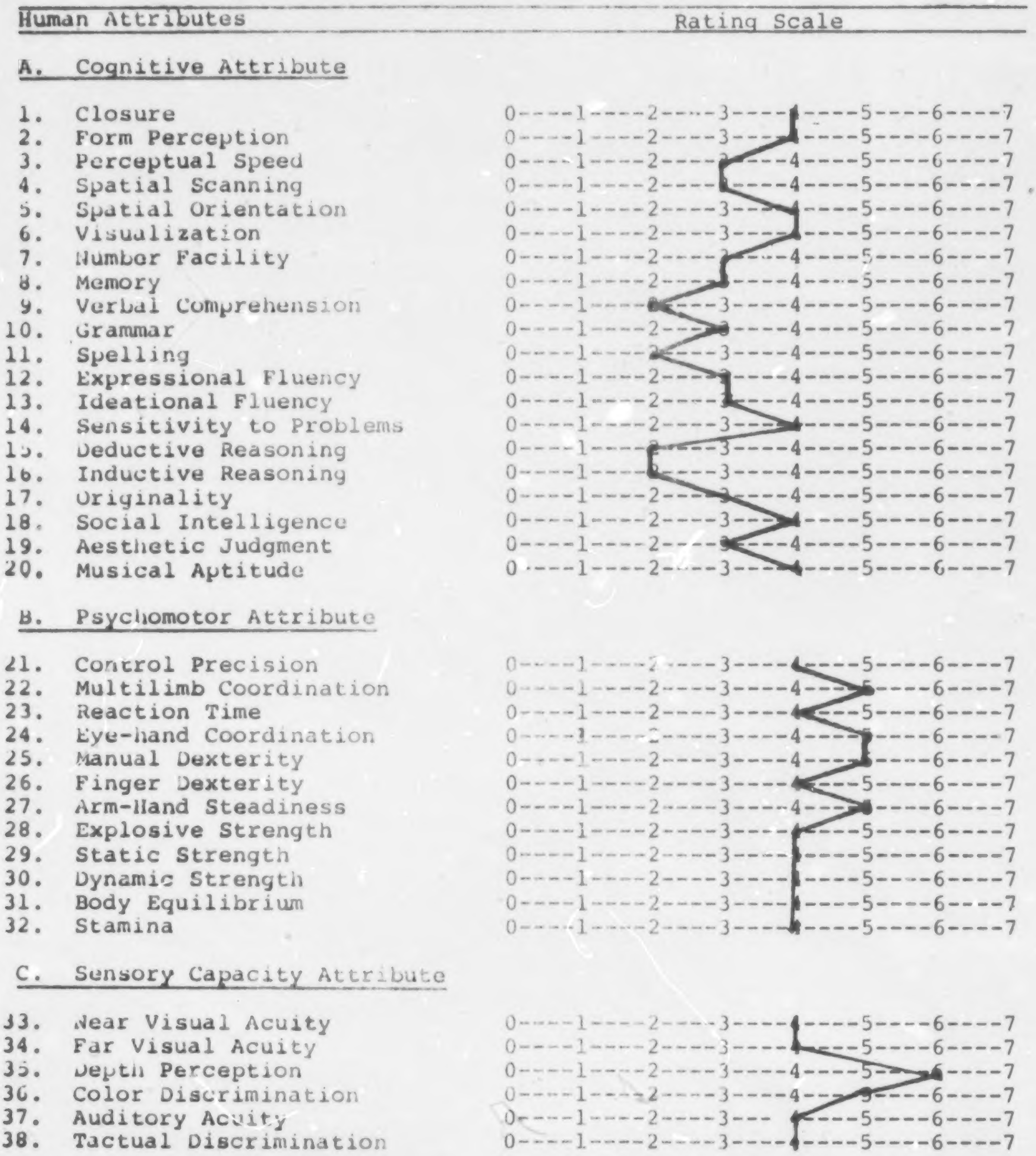
33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



MEDIAN PROFILE OF ATTRIBUTES-BY-EXCEPTIONALITY

TOTAL RESPONDENTS

Handicapping Condition: Learning Disabled



Human Attributes	Rating Scale
A. Cognitive Attribute	
1. Closure	0----1----2----3----4----5----6----7
2. Form Perception	0----1----2----3----4----5----6----7
3. Perceptual Speed	0----1----2----3----4----5----6----7
4. Spatial Scanning	0----1----2----3----4----5----6----7
5. Spatial Orientation	0----1----2----3----4----5----6----7
6. Visualization	0----1----2----3----4----5----6----7
7. Number Facility	0----1----2----3----4----5----6----7
8. Memory	0----1----2----3----4----5----6----7
9. Verbal Comprehension	0----1----2----3----4----5----6----7
10. Grammar	0----1----2----3----4----5----6----7
11. Spelling	0----1----2----3----4----5----6----7
12. Expressional Fluency	0----1----2----3----4----5----6----7
13. Ideational Fluency	0----1----2----3----4----5----6----7
14. Sensitivity to Problems	0----1----2----3----4----5----6----7
15. Deductive Reasoning	0----1----2----3----4----5----6----7
16. Inductive Reasoning	0----1----2----3----4----5----6----7
17. Originality	0----1----2----3----4----5----6----7
18. Social Intelligence	0----1----2----3----4----5----6----7
19. Aesthetic Judgment	0----1----2----3----4----5----6----7
20. Musical Aptitude	0----1----2----3----4----5----6----7
B. Psychomotor Attribute	
21. Control Precision	0----1----2----3----4----5----6----7
22. Multilimb Coordination	0----1----2----3----4----5----6----7
23. Reaction Time	0----1----2----3----4----5----6----7
24. Eye-hand Coordination	0----1----2----3----4----5----6----7
25. Manual Dexterity	0----1----2----3----4----5----6----7
26. Finger Dexterity	0----1----2----3----4----5----6----7
27. Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28. Explosive Strength	0----1----2----3----4----5----6----7
29. Static Strength	0----1----2----3----4----5----6----7
30. Dynamic Strength	0----1----2----3----4----5----6----7
31. Body Equilibrium	0----1----2----3----4----5----6----7
32. Stamina	0----1----2----3----4----5----6----7
C. Sensory Capacity Attribute	
33. Near Visual Acuity	0----1----2----3----4----5----6----7
34. Far Visual Acuity	0----1----2----3----4----5----6----7
35. Depth Perception	0----1----2----3----4----5----6----7
36. Color Discrimination	0----1----2----3----4----5----6----7
37. Auditory Acuity	0----1----2----3----4----5----6----7
38. Tactual Discrimination	0----1----2----3----4----5----6----7

MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

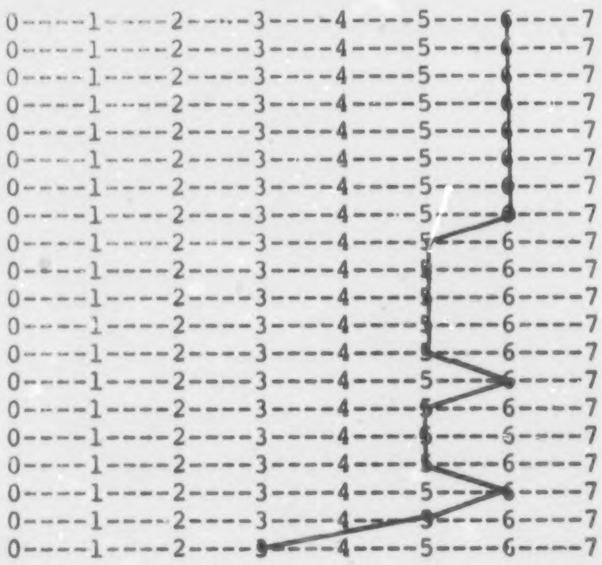
INDIVIDUAL RESPONDENT

Handicapping Condition: Hard of Hearing

Human Attributes — Rating Scale

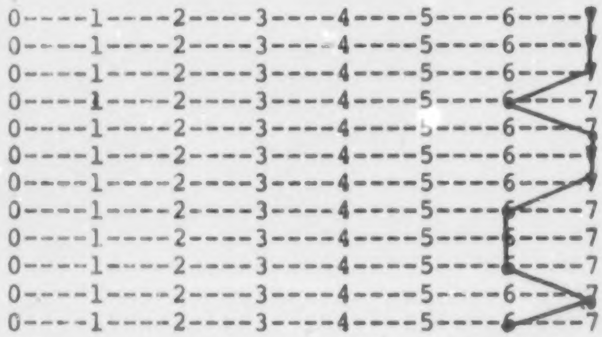
A. Cognitive Attribute

1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude



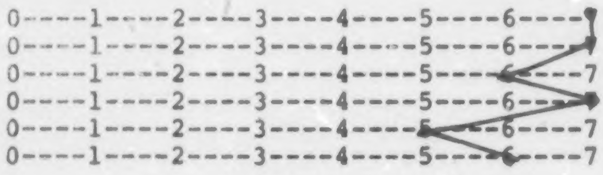
B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina



C. Sensory Capacity Attribute

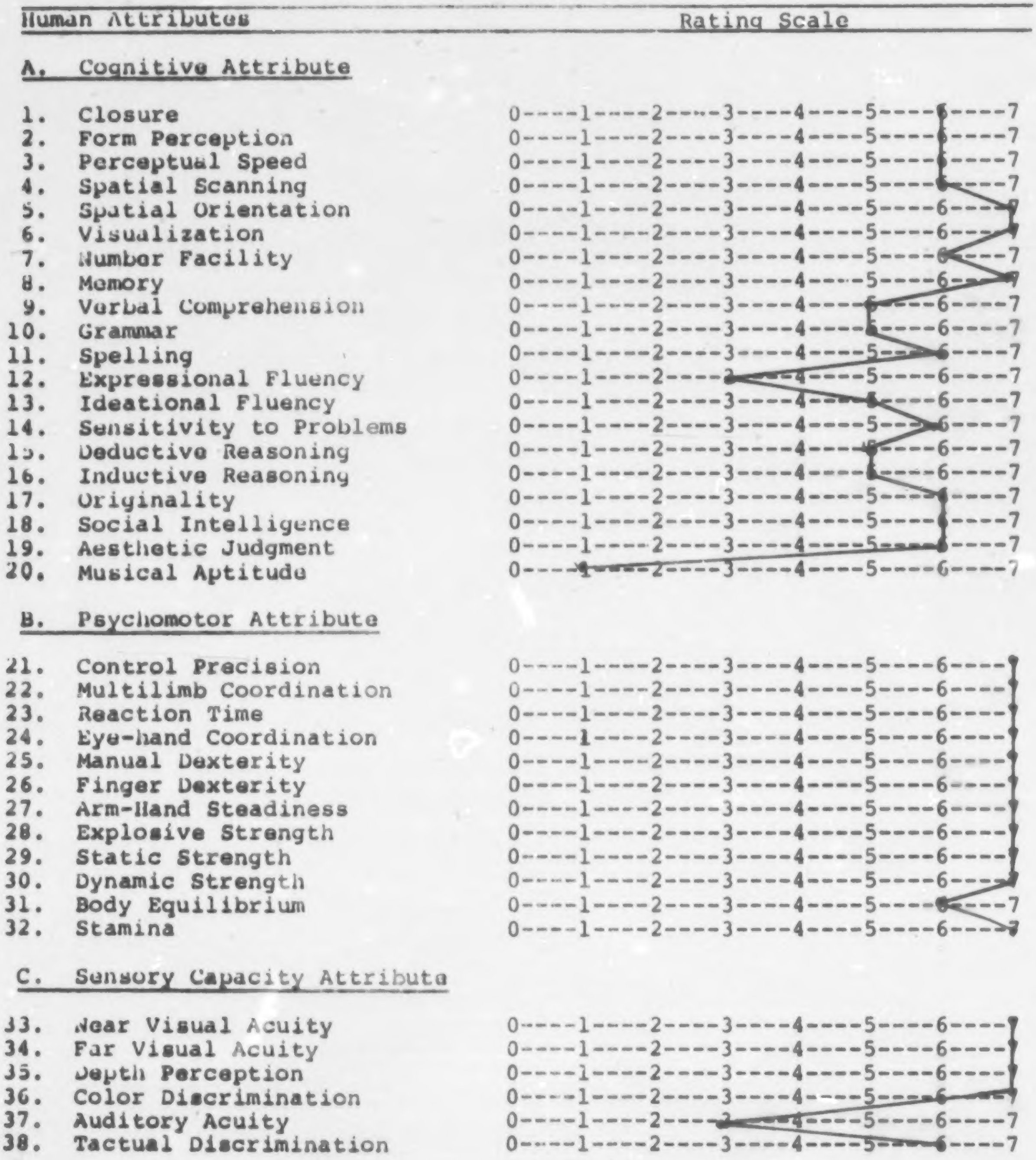
33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Hard of Hearing

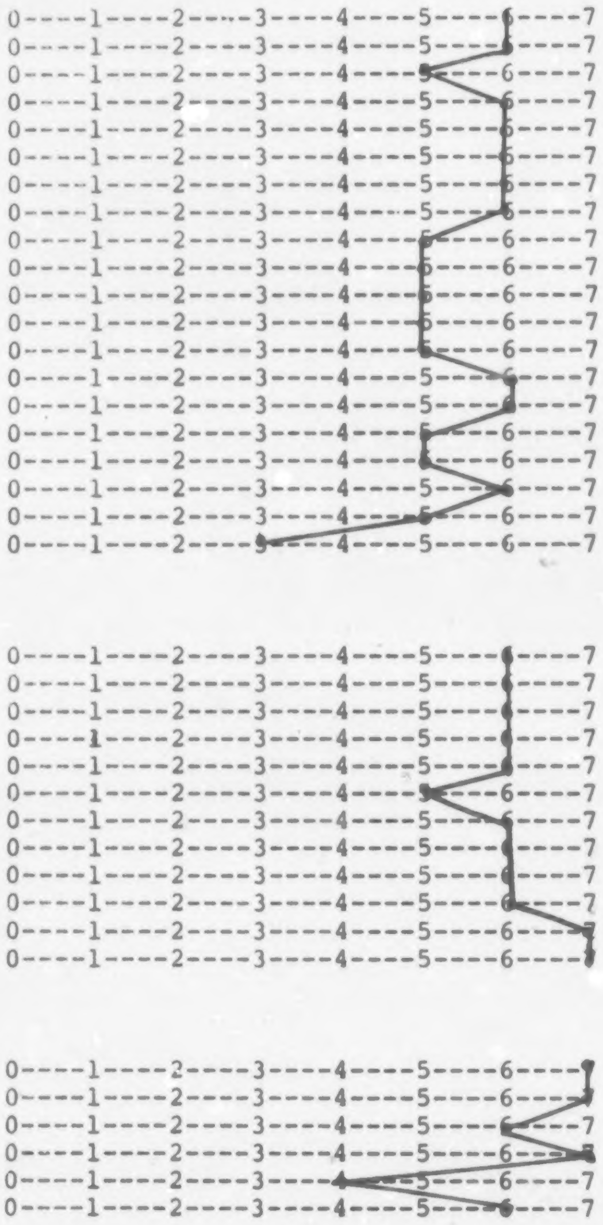


Human Attributes	Rating Scale
A. Cognitive Attribute	
1. Closure	0----1----2----3----4----5----6----7
2. Form Perception	0----1----2----3----4----5----6----7
3. Perceptual Speed	0----1----2----3----4----5----6----7
4. Spatial Scanning	0----1----2----3----4----5----6----7
5. Spatial Orientation	0----1----2----3----4----5----6----7
6. Visualization	0----1----2----3----4----5----6----7
7. Number Facility	0----1----2----3----4----5----6----7
8. Memory	0----1----2----3----4----5----6----7
9. Verbal Comprehension	0----1----2----3----4----5----6----7
10. Grammar	0----1----2----3----4----5----6----7
11. Spelling	0----1----2----3----4----5----6----7
12. Expressional Fluency	0----1----2----3----4----5----6----7
13. Ideational Fluency	0----1----2----3----4----5----6----7
14. Sensitivity to Problems	0----1----2----3----4----5----6----7
15. Deductive Reasoning	0----1----2----3----4----5----6----7
16. Inductive Reasoning	0----1----2----3----4----5----6----7
17. Originality	0----1----2----3----4----5----6----7
18. Social Intelligence	0----1----2----3----4----5----6----7
19. Aesthetic Judgment	0----1----2----3----4----5----6----7
20. Musical Aptitude	0----1----2----3----4----5----6----7
B. Psychomotor Attribute	
21. Control Precision	0----1----2----3----4----5----6----7
22. Multilimb Coordination	0----1----2----3----4----5----6----7
23. Reaction Time	0----1----2----3----4----5----6----7
24. Eye-hand Coordination	0----1----2----3----4----5----6----7
25. Manual Dexterity	0----1----2----3----4----5----6----7
26. Finger Dexterity	0----1----2----3----4----5----6----7
27. Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28. Explosive Strength	0----1----2----3----4----5----6----7
29. Static Strength	0----1----2----3----4----5----6----7
30. Dynamic Strength	0----1----2----3----4----5----6----7
31. Body Equilibrium	0----1----2----3----4----5----6----7
32. Stamina	0----1----2----3----4----5----6----7
C. Sensory Capacity Attribute	
33. Near Visual Acuity	0----1----2----3----4----5----6----7
34. Far Visual Acuity	0----1----2----3----4----5----6----7
35. Depth Perception	0----1----2----3----4----5----6----7
36. Color Discrimination	0----1----2----3----4----5----6----7
37. Auditory Acuity	0----1----2----3----4----5----6----7
38. Tactual Discrimination	0----1----2----3----4----5----6----7

MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Hard of Hearing



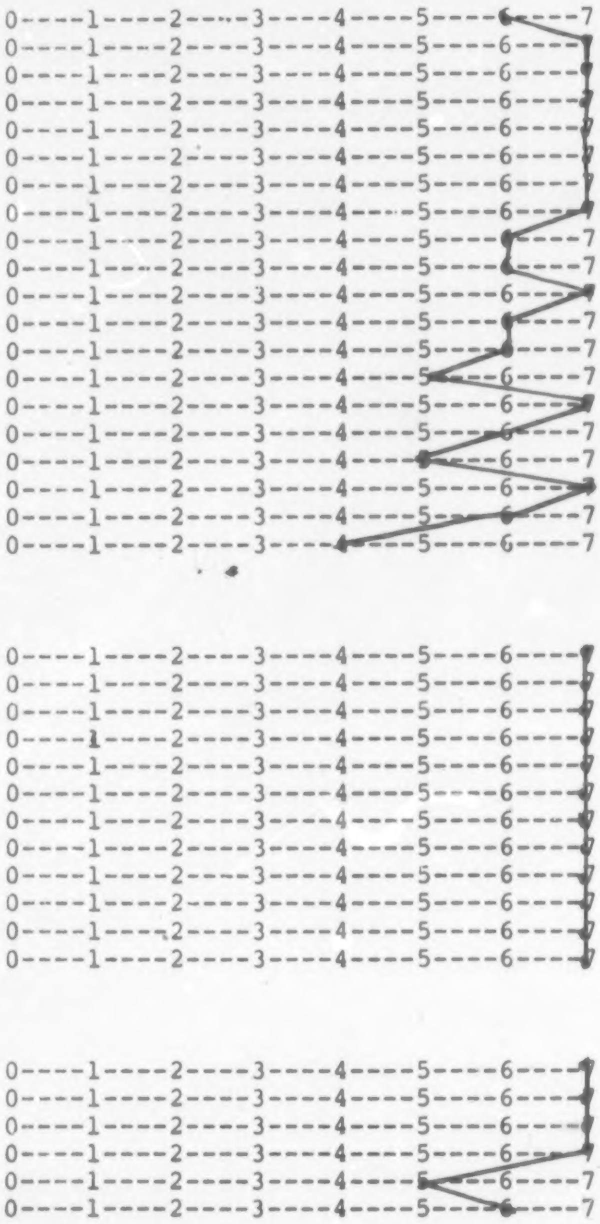
Human Attributes		Rating Scale
A. Cognitive Attribute		
1.	Closure	0----1----2----3----4----5----6----7
2.	Form Perception	0----1----2----3----4----5----6----7
3.	Perceptual Speed	0----1----2----3----4----5----6----7
4.	Spatial Scanning	0----1----2----3----4----5----6----7
5.	Spatial Orientation	0----1----2----3----4----5----6----7
6.	Visualization	0----1----2----3----4----5----6----7
7.	Number Facility	0----1----2----3----4----5----6----7
8.	Memory	0----1----2----3----4----5----6----7
9.	Verbal Comprehension	0----1----2----3----4----5----6----7
10.	Grammar	0----1----2----3----4----5----6----7
11.	Spelling	0----1----2----3----4----5----6----7
12.	Expressional Fluency	0----1----2----3----4----5----6----7
13.	Ideational Fluency	0----1----2----3----4----5----6----7
14.	Sensitivity to Problems	0----1----2----3----4----5----6----7
15.	Deductive Reasoning	0----1----2----3----4----5----6----7
16.	Inductive Reasoning	0----1----2----3----4----5----6----7
17.	Originality	0----1----2----3----4----5----6----7
18.	Social Intelligence	0----1----2----3----4----5----6----7
19.	Aesthetic Judgment	0----1----2----3----4----5----6----7
20.	Musical Aptitude	0----1----2----3----4----5----6----7
B. Psychomotor Attribute		
21.	Control Precision	0----1----2----3----4----5----6----7
22.	Multilimb Coordination	0----1----2----3----4----5----6----7
23.	Reaction Time	0----1----2----3----4----5----6----7
24.	Eye-hand Coordination	0----1----2----3----4----5----6----7
25.	Manual Dexterity	0----1----2----3----4----5----6----7
26.	Finger Dexterity	0----1----2----3----4----5----6----7
27.	Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28.	Explosive Strength	0----1----2----3----4----5----6----7
29.	Static Strength	0----1----2----3----4----5----6----7
30.	Dynamic Strength	0----1----2----3----4----5----6----7
31.	Body Equilibrium	0----1----2----3----4----5----6----7
32.	Stamina	0----1----2----3----4----5----6----7
C. Sensory Capacity Attribute		
33.	Near Visual Acuity	0----1----2----3----4----5----6----7
34.	Far Visual Acuity	0----1----2----3----4----5----6----7
35.	Depth Perception	0----1----2----3----4----5----6----7
36.	Color Discrimination	0----1----2----3----4----5----6----7
37.	Auditory Acuity	0----1----2----3----4----5----6----7
38.	Tactual Discrimination	0----1----2----3----4----5----6----7

MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Hard of Hearing

Human Attributes	Rating Scale
A. Cognitive Attribute	
1. Closure	0----1----2----3----4----5----6----7
2. Form Perception	0----1----2----3----4----5----6----7
3. Perceptual Speed	0----1----2----3----4----5----6----7
4. Spatial Scanning	0----1----2----3----4----5----6----7
5. Spatial Orientation	0----1----2----3----4----5----6----7
6. Visualization	0----1----2----3----4----5----6----7
7. Number Facility	0----1----2----3----4----5----6----7
8. Memory	0----1----2----3----4----5----6----7
9. Verbal Comprehension	0----1----2----3----4----5----6----7
10. Grammar	0----1----2----3----4----5----6----7
11. Spelling	0----1----2----3----4----5----6----7
12. Expressional Fluency	0----1----2----3----4----5----6----7
13. Ideational Fluency	0----1----2----3----4----5----6----7
14. Sensitivity to Problems	0----1----2----3----4----5----6----7
15. Deductive Reasoning	0----1----2----3----4----5----6----7
16. Inductive Reasoning	0----1----2----3----4----5----6----7
17. Originality	0----1----2----3----4----5----6----7
18. Social Intelligence	0----1----2----3----4----5----6----7
19. Aesthetic Judgment	0----1----2----3----4----5----6----7
20. Musical Aptitude	0----1----2----3----4----5----6----7
B. Psychomotor Attribute	
21. Control Precision	0----1----2----3----4----5----6----7
22. Multilimb Coordination	0----1----2----3----4----5----6----7
23. Reaction Time	0----1----2----3----4----5----6----7
24. Eye-hand Coordination	0----1----2----3----4----5----6----7
25. Manual Dexterity	0----1----2----3----4----5----6----7
26. Finger Dexterity	0----1----2----3----4----5----6----7
27. Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28. Explosive Strength	0----1----2----3----4----5----6----7
29. Static Strength	0----1----2----3----4----5----6----7
30. Dynamic Strength	0----1----2----3----4----5----6----7
31. Body Equilibrium	0----1----2----3----4----5----6----7
32. Stamina	0----1----2----3----4----5----6----7
C. Sensory Capacity Attribute	
33. Near Visual Acuity	0----1----2----3----4----5----6----7
34. Far Visual Acuity	0----1----2----3----4----5----6----7
35. Depth Perception	0----1----2----3----4----5----6----7
36. Color Discrimination	0----1----2----3----4----5----6----7
37. Auditory Acuity	0----1----2----3----4----5----6----7
38. Tactual Discrimination	0----1----2----3----4----5----6----7



MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Blind

Human Attributes — Rating Scale

A. Cognitive Attribute

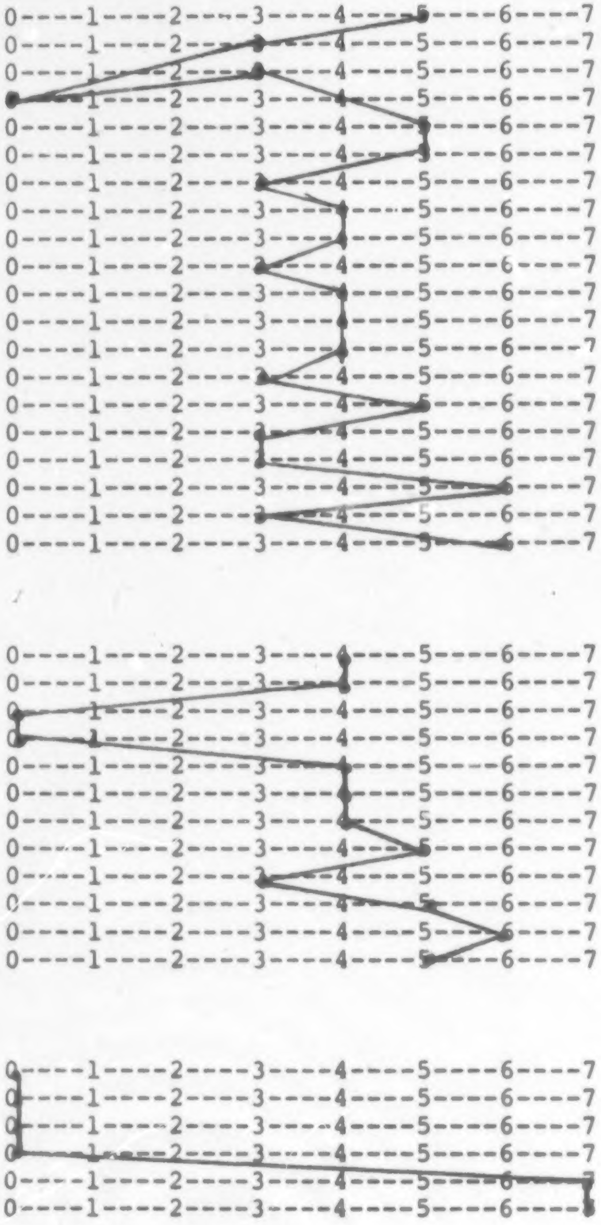
1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

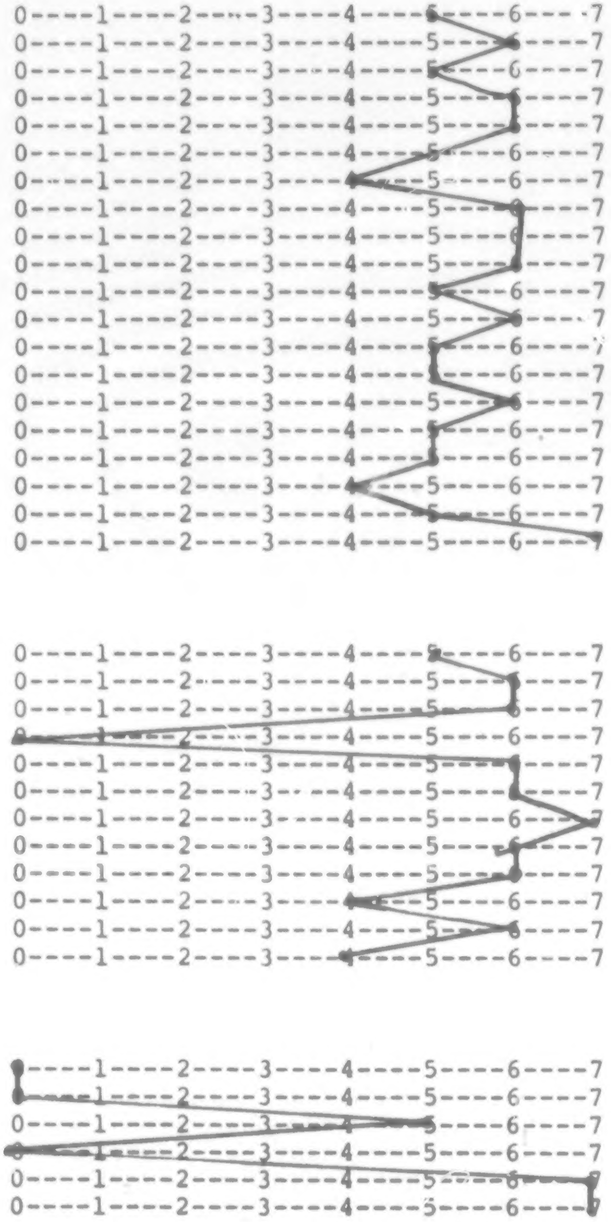
33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Blind



Human Attributes	Rating Scale
A. Cognitive Attribute	
1. Closure	0----1----2----3----4----5----6----7
2. Form Perception	0----1----2----3----4----5----6----7
3. Perceptual Speed	0----1----2----3----4----5----6----7
4. Spatial Scanning	0----1----2----3----4----5----6----7
5. Spatial Orientation	0----1----2----3----4----5----6----7
6. Visualization	0----1----2----3----4----5----6----7
7. Number Facility	0----1----2----3----4----5----6----7
8. Memory	0----1----2----3----4----5----6----7
9. Verbal Comprehension	0----1----2----3----4----5----6----7
10. Grammar	0----1----2----3----4----5----6----7
11. Spelling	0----1----2----3----4----5----6----7
12. Expressional Fluency	0----1----2----3----4----5----6----7
13. Ideational Fluency	0----1----2----3----4----5----6----7
14. Sensitivity to Problems	0----1----2----3----4----5----6----7
15. Deductive Reasoning	0----1----2----3----4----5----6----7
16. Inductive Reasoning	0----1----2----3----4----5----6----7
17. Originality	0----1----2----3----4----5----6----7
18. Social Intelligence	0----1----2----3----4----5----6----7
19. Aesthetic Judgment	0----1----2----3----4----5----6----7
20. Musical Aptitude	0----1----2----3----4----5----6----7
B. Psychomotor Attribute	
21. Control Precision	0----1----2----3----4----5----6----7
22. Multilimb Coordination	0----1----2----3----4----5----6----7
23. Reaction Time	0----1----2----3----4----5----6----7
24. Eye-hand Coordination	0----1----2----3----4----5----6----7
25. Manual Dexterity	0----1----2----3----4----5----6----7
26. Finger Dexterity	0----1----2----3----4----5----6----7
27. Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28. Explosive Strength	0----1----2----3----4----5----6----7
29. Static Strength	0----1----2----3----4----5----6----7
30. Dynamic Strength	0----1----2----3----4----5----6----7
31. Body Equilibrium	0----1----2----3----4----5----6----7
32. Stamina	0----1----2----3----4----5----6----7
C. Sensory Capacity Attribute	
33. Near Visual Acuity	0----1----2----3----4----5----6----7
34. Far Visual Acuity	0----1----2----3----4----5----6----7
35. Depth Perception	0----1----2----3----4----5----6----7
36. Color Discrimination	0----1----2----3----4----5----6----7
37. Auditory Acuity	0----1----2----3----4----5----6----7
38. Tactual Discrimination	0----1----2----3----4----5----6----7

MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Blind

Human Attributes — Rating Scale

A. Cognitive Attribute

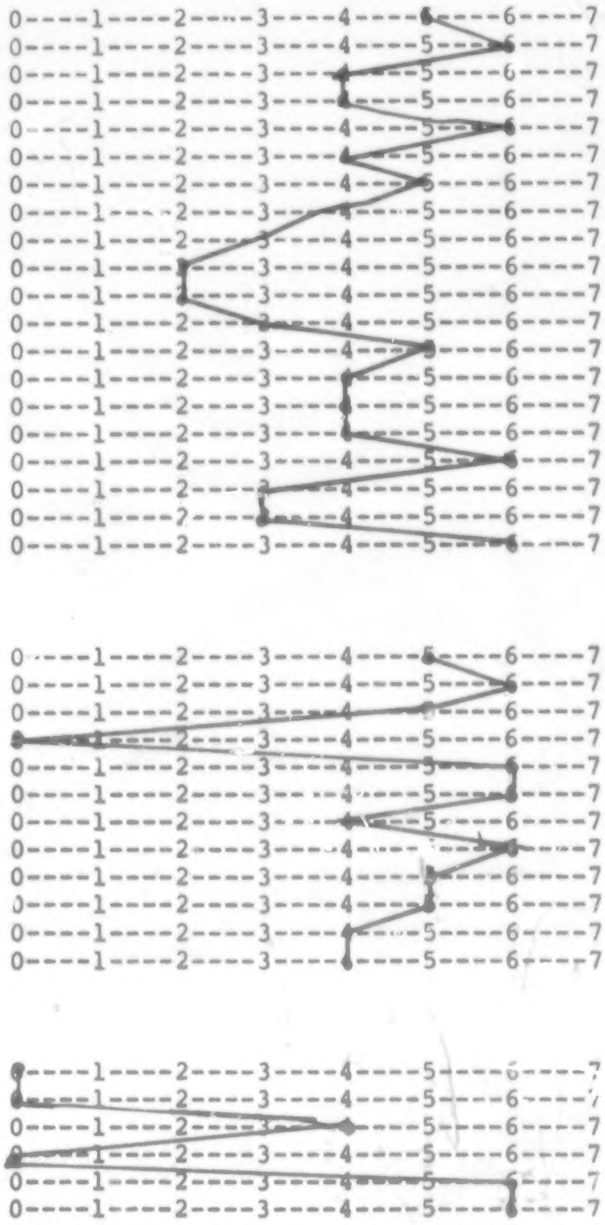
1. Closure
2. Form Perception
3. Perceptual Speed
4. Spatial Scanning
5. Spatial Orientation
6. Visualization
7. Number Facility
8. Memory
9. Verbal Comprehension
10. Grammar
11. Spelling
12. Expressional Fluency
13. Ideational Fluency
14. Sensitivity to Problems
15. Deductive Reasoning
16. Inductive Reasoning
17. Originality
18. Social Intelligence
19. Aesthetic Judgment
20. Musical Aptitude

B. Psychomotor Attribute

21. Control Precision
22. Multilimb Coordination
23. Reaction Time
24. Eye-hand Coordination
25. Manual Dexterity
26. Finger Dexterity
27. Arm-Hand Steadiness
28. Explosive Strength
29. Static Strength
30. Dynamic Strength
31. Body Equilibrium
32. Stamina

C. Sensory Capacity Attribute

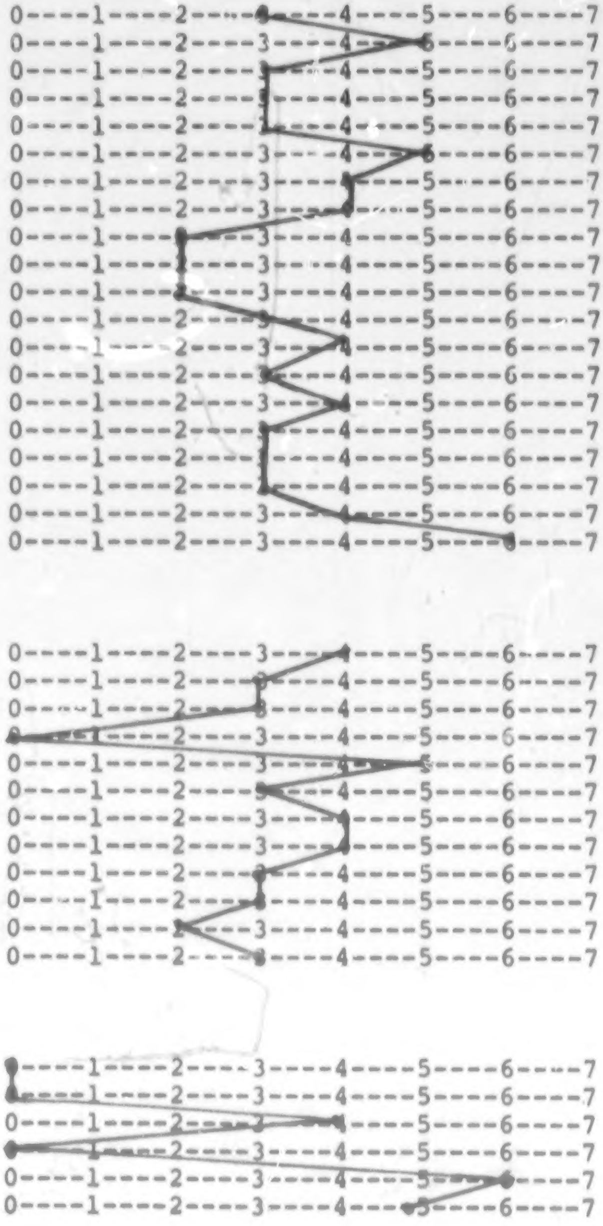
33. Near Visual Acuity
34. Far Visual Acuity
35. Depth Perception
36. Color Discrimination
37. Auditory Acuity
38. Tactual Discrimination



MEDIAN PROFILE OF ATTRIBUTE-BY-EXCEPTIONALITY

INDIVIDUAL RESPONDENT

Handicapping Condition: Blind



Human Attributes	Rating Scale
A. Cognitive Attribute	
1. Closure	0----1----2----3----4----5----6----7
2. Form Perception	0----1----2----3----4----5----6----7
3. Perceptual Speed	0----1----2----3----4----5----6----7
4. Spatial Scanning	0----1----2----3----4----5----6----7
5. Spatial Orientation	0----1----2----3----4----5----6----7
6. Visualization	0----1----2----3----4----5----6----7
7. Number Facility	0----1----2----3----4----5----6----7
8. Memory	0----1----2----3----4----5----6----7
9. Verbal Comprehension	0----1----2----3----4----5----6----7
10. Grammar	0----1----2----3----4----5----6----7
11. Spelling	0----1----2----3----4----5----6----7
12. Expressional Fluency	0----1----2----3----4----5----6----7
13. Ideational Fluency	0----1----2----3----4----5----6----7
14. Sensitivity to Problems	0----1----2----3----4----5----6----7
15. Deductive Reasoning	0----1----2----3----4----5----6----7
16. Inductive Reasoning	0----1----2----3----4----5----6----7
17. Originality	0----1----2----3----4----5----6----7
18. Social Intelligence	0----1----2----3----4----5----6----7
19. Aesthetic Judgment	0----1----2----3----4----5----6----7
20. Musical Aptitude	0----1----2----3----4----5----6----7
B. Psychomotor Attribute	
21. Control Precision	0----1----2----3----4----5----6----7
22. Multilimb Coordination	0----1----2----3----4----5----6----7
23. Reaction Time	0----1----2----3----4----5----6----7
24. Eye-hand Coordination	0----1----2----3----4----5----6----7
25. Manual Dexterity	0----1----2----3----4----5----6----7
26. Finger Dexterity	0----1----2----3----4----5----6----7
27. Arm-Hand Steadiness	0----1----2----3----4----5----6----7
28. Explosive Strength	0----1----2----3----4----5----6----7
29. Static Strength	0----1----2----3----4----5----6----7
30. Dynamic Strength	0----1----2----3----4----5----6----7
31. Body Equilibrium	0----1----2----3----4----5----6----7
32. Stamina	0----1----2----3----4----5----6----7
C. Sensory Capacity Attribute	
33. Near Visual Acuity	0----1----2----3----4----5----6----7
34. Far Visual Acuity	0----1----2----3----4----5----6----7
35. Depth Perception	0----1----2----3----4----5----6----7
36. Color Discrimination	0----1----2----3----4----5----6----7
37. Auditory Acuity	0----1----2----3----4----5----6----7
38. Tactual Discrimination	0----1----2----3----4----5----6----7

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